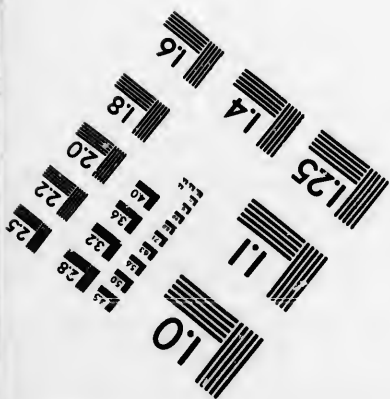
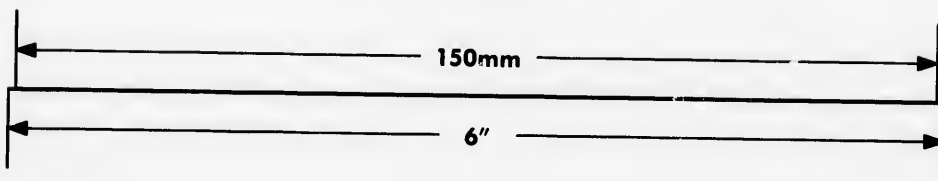
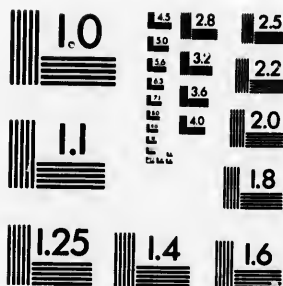
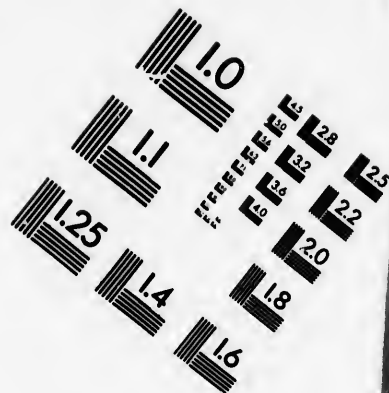
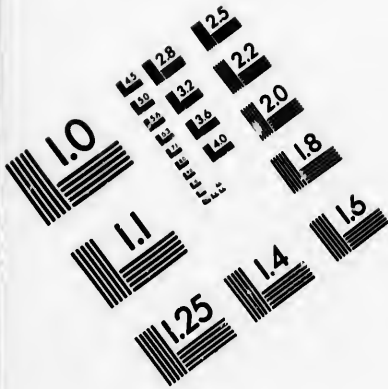


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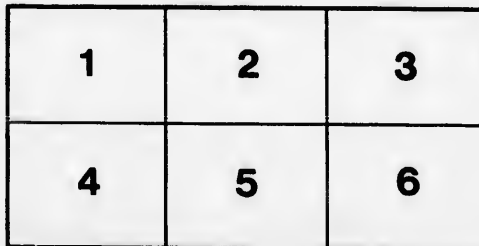
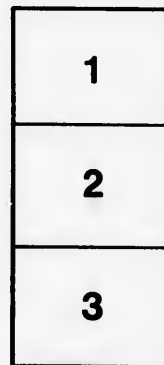
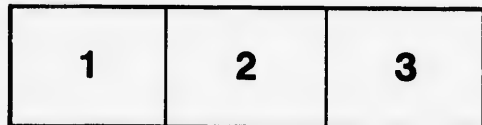
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REPORT

OF THE

SELECT COMMITTEE

OF

THE LEGISLATIVE ASSEMBLY

OF THE PROVINCE OF MANITOBA,

Appointed to procure evidence as to the practicality of the establishment of a system of communication with this Province

via

HUDSON'S BAY.

PRESENTED BY THE HON. MR. BROWN,

PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY.

WINNIPEG, MAN:

GEDEON BOURDEAU, QUEEN'S PRINTER.

A. D. 1884.

LEGISLATIVE ASSEMBLY,

18TH MARCH, 1884.

Resolved, That a Select Committee, composed of

Mr. Harrison,

Mr. Davidson,

“ Greenway,

“ Cyr,

“ Killam,

Hon. “ Brown,

“ Leacock,

“ “ Miller,

“ Wilson,

be appointed to procure, and, if deemed advisable, to publish evidence on the practicability of the establishment of a system of communication with this Province *via* HUDSON'S BAY.

[ATTEST]

THOS. SPENCE,

Clerk of the Legislative Assembly.

MARCH 20TH, 1884.

The select Committee of the House of Assembly appointed to procure, and if deemed advisable to publish evidence on the practicability of the establishment of a system of communication with this Province, *via* HUDSON'S BAY, met at 10 A.M.

Present, The Hon. The Speaker, Hon. Messrs. Brown and Miller, Messrs. Cyr, Greenway, Harrison and Wilson.

Moved by Dr. Harrison, seconded by Mr. Greenway,
That the Hon. C. P. Brown be Chairman of this committee. Carried.

Moved by Mr. Greenway, seconded by Dr. Harrison,
That Lt. Col. T C. Scoble be requested to act as Secretary to this committee. Carried.

Resolved, That the following persons be requested to appear before the Committee to give evidence on the subject of its enquiry, *vis* :—

Mr. John Bruce,	St. Boniface.
Capt. Fournier,	"
Capt. J. Hackland,	Headingly.
Capt. Kennedy,	St. Andrews.
Walter Dickson, Esq.,	Lake Francis.
Mr. John Moyes,	Winnipeg
H. A. Jukes, Esq.,	"
Chas. Hay, Esq, M.P.P.,	"
Mr. N. Stevenson,	Headingly.
C. N. Bell, Esq.,	Winnipeg

The Secretary was authorized to arrange the dates when these gentlemen should be invited to appear before the committee.

Resolved, That this committee sit with closed doors, and that its deliberations be considered confidential, until its report be officially published, and that no persons except members of the House of Assembly, and those invited by the Committee to give evidence, shall be present during the meetings of the Committee.

Resolved, That this Committee meet at 10 A.M. on Tuesday, Thursday and Saturday of each week, during this session of the House, and that if then the work assigned to it be not completed permission be obtained from

SPECIAL COMMITTEE REPORT.

the House to prosecute the same after the House rises, and to report to the next session of the Legislature.

(Sd.) C. P. BROWN,
Chairman.

COMMITTEE ROOM,
MARCH 22nd, 1884.

The Committee met, but adjourned from want of evidence, sufficient time not having elapsed for the summons of witnesses.

COMMITTEE ROOM,
MARCH 24th, 1884.

The Committee met at 10 A. M.

Present. Hon. C. P. Brown, Chairman; Hon. Messrs. Norquay and Miller, Dr. Harrison, Messrs. Davidson, Woodworth, Leacock and Wilson.

The minutes of previous meetings were read and confirmed.

Resolved, That the days of meeting of this Committee be changed to Monday, Wednesday and Friday, of each week, and that the Secretary notify such change to the clerk of committees.

The Secretary having read the statement of Mr. John Moyes, his examination was continted and concluded.

Mr. Woodworth, M. P. P., presented a letter from Isaac H Folger, Nantucket, Mass., which was read and ordered to be filed as evidence.

The Secretary was authorized to ask attendance of the following persons, viz :

Rev. Mr. Semmens,	Emerson.
James Ward,	St. Anne's
George Heenan,	Selkirk.
Geo. A. Bayne, C. E.,	Winnipeg.
Henry Johnson,	do
Wm. Clarke,	do
Adrian Neison,	Selkirk
Capt. Colin Sinclair,	Kildonan.

(Sd.) C. P. BROWN,
Chairman.

SELECT COMMITTEE REPORT.

1. JOHN MOYES,

(EXD. MARCH 24th, 1884.)

2. Engineer,

3. 165 McWilliam St., Winnipeg.

Have been engaged as engineer on a sealing vessel that ran 150 miles into Hudson's Straits in March, 1871. Was sailing out of St. Johns, Newfoundland, for five years, two of which (1871 and 1872) in sealing vessels. In 1871 we left St. John's on the 10th of March; reached Hudson's Straits about the 25th, and then had to run back, lest we should run out of coal. Took about 7,000 seals, arrived in St John's 4th April. The vessel I was in was the "Osprey," about 600 tons, 150 h. p. low pressure engines, which burned a great deal of coal. She was an old fashioned vessel, and was since lost in Buena Vista Bay, east coast Newfoundland. We went in and out of the ice on our way up to the Straits, in search of seals, could have found open water farther out to sea, met nothing but field ice excepting one or two bergs. The only really bad weather we had was in Trinity Bay, N'd., on the return trip. Sealing trips not considered specially dangerous, although vessels are necessarily in amongst the ice all the time. Sealers are insured. The sealers leave St. John's and Harbor Grace, N'd., from 1st to 10th March, after young seals, returning in from two to five weeks, as they get their cargos. They go out after old seals about middle of April, returning by middle of May. The ice met in the Straits was field ice altogether. Sometimes would have to back up three or four hundred yards, and run at the ice to open channel, then go ahead till again stopped and back up again and run at ice. Made way easily in that way, made perhaps three miles an hour. Never thought of altering course on account of ice, but made right for it and pushed through to open water. Sometimes the open water was narrow, not more than quarter mile, sometimes more. Could have found open water all along, if we had coasted round the floes. Ice varies in thickness from four to eight feet, could run through ice 16 feet thick. Ice opens and closes with currents. When we bunt ice, it opens out perhaps for 500 yards. Sealers have iron sterns between 10 and 15 feet, and iron chafing bands, otherwise built of wood. Never heard from any one that the navigation of Hudson's Straits was particularly dangerous. Sealers accustomed to go there in search of seals. Ice breaks up there as early as in any other part. Have not heard of any particular time when sealers can go into Straits in spring, but think that with the improved class of vessels they could go in any time. Ice clings to shores early in spring, but after you get outside of shore ice, find no difficulty in keeping to open water. Sailing vessels that go sealing are allowed to leave 1st March, steamers on the 10th; this is according to agreement between owners. There are upwards of 33 sealing steamers leaving the port in Newfoundland every spring. After the

SELECT COMMITTEE REPORT.

old seal fishery is over in the end of May, these vessels are open for charter. Some are sent to Great Britain with cargoes of oil and skins, others are laid up after the sealing season is over. The following is a list of names of the sealing steamers I remember. Nearly all the newer vessels have compound engines, burning little coal, some of the larger ones could carry coal enough for an eight months' cruise.

Proteus,	1,500 tons.
Neptune,	1,500 "
Eagle,	1,500 "
Greenland,	1,200 "
Iceland,	1,200 "
Leopard,	1,000 "
Merlin,	700 "
Wolf,	700 "
Tigress,	650 "

(Signed) JOHN MOYES,

[COPY.]

NANTUCKET, MASS., March 15th, 1884.

J. E. WOODWORTH, M. P. P.,

Brandon, Man.

MY DEAR SIR,—

Since writing you I have conversed with Capt. Timothy F. Clisby, who for fourteen years has been right whaling from New London, Connecticut, in schooner "Era," owned by C. A. Williams & Co. of that port.

Capt. Clisby has been whaling every summer in Hudson's Strait and Bay, and Cyrus Field Bay (north of Frobisher's Bay.) He is a practical man, thoroughly conversant with that locality, and claims to be a thorough navigator and pilot around there. He wintered in Cyrus Field Bay in 1882-3 for the second time in his experience. This is the substance of his last voyage: Left New London, Conn., for the north, June 22nd, 1882; arrived at Resolution Island, north (side East entrance) of Hudson's Strait, July 13th. Found ice, but sailed to Orkelea, about opposite Salisbury Island, July 19th. (Salisbury Island is at Western entrance of Straits). Could have crossed Hudson's Bay to Fort Churchill easily. Ice left Hudson's Straits so that a sailing vessel could go through early in July, 1883. "My experience," the Captain adds, "tells me that navigation by steam is entirely practicable for four months in the year, viz: July, August September, and October, and in many years the

SELECT COMMITTEE REPORT.

most of November." He also said that as a general thing it was comparatively smooth water in Hudson's Bay, very smooth in the Strait, and generally good, until Greenland was passed and the Atlantic proper entered—that is during the summer months—and he saw no reason why steamers could not make excellent speed on that course for four months certainly in the year; and in open winters, five months; and communication from Winnipeg to England a fixed fact, if energy and capital were combined. He was enthusiastic over the matter, and seemed to believe in it. Capt. Clisby is a young man educated in our High School, and while expressing confidence, is not too extravagant, leaning all the time to four months rather than five. He is now in the employ of C. A. Williams & Co., and next year fits his vessel for the Arctic, and goes with a second vessel under his direction, being a sort of fleet captain."

* * * * *

Yours, sincerely,

(Sd.) ISAAC H. FOLGER.

COMMITTEE ROOM,

March 26th, 1884.

The Committee met at 10:30 A.M.

Present, Mr. Gigot, in the chair, the Hon. the Speaker, Drs. Harrison and Wilson, Messrs. Jackson, Davidson, Winram, Woodworth, Leacock.

The minutes of previous meeting having been read and confirmed.

The Secretary read the statement of Capt. Kennedy, formerly of the Hudson's Bay Company's service, and commander of the "Prince Albert," Lady Franklin Exploring Expedition. Examination continued and concluded.

The Secretary read the statement of Henry Johnston, for 13 years in employ of Hudson's Bay Company, at York Factory. The examination of the following named witnesses was proceeded with.

Capt. J. Hackland,	Headingly.
Capt. Colin Sinclair,	Kildonan.
Mr. Wm. Stevenson,	Headingly.

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The Secretary was authorized to ask the attendance of the following persons, viz:—

Jno. Hargraves,	High Bluff.
Capt. Robinson,	Winnipeg.
D. MacArthur,	Winnipeg.

The Secretary was authorized to report to the House, and to ask leave to sit again.

(Sd.)

E. F. GIGOT,
CHAIRMAN.

MARCH 25TH, 1884.

1. CAPT. KENNEDY,
2. Retired Captain Mercantile Marine.
3. St. Andrews, Man.

Was 8 years in service of H. B. Co. at Ungava Bay, and during that time was travelling a great deal between Fort Chimo and the various rivers emptying into Hudson's Straits, trading for the Company. Made survey of Georges River Harbor in spring of 1839. In autumn of 1838, traversed coast from Fort Chimo River (Kanebascon R) to Georges River. Have coasted in a York boat, that piece of shore line every month from July to November. Attempted it in June, but was more or less obstructed by ice. Found no ice after July in the Bay, and only on one occasion found some ice on the 1st November, and then only one small piece of field ice. Ice commenced to form on the Bay about 15th November. During winter the ice forms along the coasts of the Bay in the period of full tide, breaking off at the ebb, and setting out with the southerly current past Cape Chudleigh into the Atlantic. The prevailing winds were from the north, setting the ice from the Straits into Ungava Bay, and in consequence opening a corresponding channel on the north shore of the Straits. The polar currents that pass through the Straits do not follow either shore but generally set down the middle of the Strait joining the Labrador current at the eastern entrance of the Straits. The ice that comes into the Straits is chiefly from Fox Channel and is brought into the Straits by the polar current above mentioned. This ice commences to run about the 1st June. It is all field ice, much broken. No such thing as icebergs (as popularly understood) are to be found in the Straits at any time. Bergs are of glacial formation, and are formed in the deep fiords of the Greenland coast from Melville Bay to the circumpolar land, and not in any channel or inland sea emptying into the Atlantic through Hudson's Straits. The tides are very high in Ungava Bay. I have found the Spring

SPECIAL COMMITTEE REPORT.

tides at Georges River to be as high as 60, and the neap tides 40 feet. I should think that on the northern coast of the straits the spring tides cannot be less than 40 feet and the neap tide about 30 feet. The difference in the tides on the northern and southern shores of the straits is in consequence of the rivers on the southern coast being larger, and consequently there is more back water. The ice that forms in the inlets and mouths of rivers rises and falls with each tide, but does not float out. That ice that forms on the exposed coast lines of the Strait is loosened and carried out by the outgoing tide. Sometimes it is jammed by the wind against the coast, and then may increase in thickness. Not more than four inches of ice would form in a night, but the thickness might be increased to perhaps two feet if detained on the coast for a few days. The ice in the bays and rivers forms to a depth of about four feet during the winter. Have not known ice more than four feet in thickness to form in those waters. In 1851 I was frozen in, in Prince Regent's Inlet, and had to saw my way out in July. The ice then was partly honey-combed, but was only four feet in thickness. This was in latitude 74, upwards of 14 degrees north of the Straits. The average thickness of ice coming through the Straits in June cannot therefore be greater than four feet. At that time it is more or less affected by the sun—"rotted," as it is generally called—and has attained a prismatic condition, which renders clearance much easier to a vessel pushing through. Have pushed my way through such ice in a sailing vessel with a fair wind, and think a steamer of suitable description with sufficient motive power should have no difficulty in pushing through such ice at any time. The fields of ice sometimes are miles in extent, but are usually much broken. There are always open channels round the larger fields through which a vessel can find its way. A steamer, therefore, would be able to thread its way round the larger fields and push through the smaller ones with little detention. It is most necessary that an exploratory survey should be made of the northern shores of the Straits, so as to indicate where sheltering harbors can be found. I cannot of my own knowledge state where such harbors lie. The southern shores of the Straits should be avoided as much as possible as it is usually the lee shore, and there are many rapid currents. In addition, it is the recognized experience of Arctic navigators that ice opens to the North and closes to the South. Until this fact was ascertained and recognized many vessels were lost, notably the "Victory" by Sir John Ross, the "Erebus" and "Terror," by Sir John Franklin, the "Fury," by Sir E. Parry, the "Advance," by Dr. Kane, and many whalers. I do not think it would be necessary to establish many lighthouse stations in the straits. Firstly, because there are few shoals. Secondly, the prevailing clear weather and absence of fogs. Thirdly, the short period of darkness during the season from June to November. At midsummer there is only twilight and a month after, the period of darkness is only about two hours. Vessels entering the

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Straits from East, make for Cape Best and hug the Northern Shore, southerly past Salisbury and Nottingham Islands, thence North of Mansfield Island, and from thence lay a straight course to their port. The ice from Fox's Channel is met among the islands mentioned above. I regard the evidence given by the sealers and whalers is the most conclusive as to the navigation of the Straits and Bay, as they have had actual experience to relate. I have been engaged in Arctic research as commander of the "Prince Albert," fitted out by Lady Franklin to search for her husband's expedition. Was engaged in this service eighteen months in the years 1850 and 1851.

The passage between Islands (Button Islands) and Labrador Coast is perfectly safe to persons knowing the channel. Do not think there is a practical passage between Mosquito Bay and Ungava Bay. There is a barrier of rock between Hopes Advance Bay and Mosquito Bay. A survey of this route was made in 1839 by Mr. Donal Henderson for the H. B. Co., and found entirely impracticable. Would not consider it any advantage to navigation, even if such a channel existed. During the season that the channel would be clear of ice, ice might be met with in Ungava Bay, at a point where ice is more likely to remain than in any other part.

Salmon (*Salmo Solar*) are found in all rivers falling into Ungava Bay, and in streams falling into North Shore of Straits. Dr. Rae caught salmon as far north as Repulse Bay.

(Signed.)

WM. KENNEDY.

ADDENDA TO CAPT. KENNEDY'S EVIDENCE.

ST. ANDREW'S, 20th March, 1884.

COL. SCOBLE,

Secretary Committee on Hudson's Bay Enquiry,

SIR,—

I have the honor to submit, as an addition to the evidence already given by me on the Hudson's Bay route, the accompanying statement:

The outflowing current of Hudson Strait, though apparently insignificant, has its origin in the great southern ocean. It starts northward from the southern circumpolar region, receiving a fresh impetus from time to time from the stream of ice islands which are constantly breaking off from the precipitous coast line. It flows northward through the South Atlantic ocean to its equatorial region, thence into the Gulf of Mexico, from which it flows out as the "Gulf Stream," and crossing the North Atlantic in a north-easterly direction

SPECIAL COMMITTEE REPORT.

enters the polar basin, where, striking the circumpolar continent, it is thrown back into the North-West Atlantic, through three principal channels, namely, the one between Iceland and Greenland, the second through Baffin Bay, and the third through Wellington Channel, Prince Regent's Inlet, Fury and Hecla Strait, through Fox's Channel into Hudson's Strait.

This regular and uninterrupted flow of the great ocean stream, gives certain and reliable currents,—a fact which is of the highest importance in a commercial point of view, as it opens out the channels of ingress and egress into Hudson's Bay, and converts the Bay and Strait into a pathway for the wealth of the eastern quarters of the globe, as well as for that to be derived from our own country.

To capitalists the knowledge of the foregoing facts must be an assurance that they are not investing their money except in enterprises that have already proved successful to the Hudson's Bay and other Companies, and that they have here a field for investment, from which they may fairly expect remunerative and legitimate profits.

We have the larger half of a continent teeming with animal, vegetable and mineral wealth, only awaiting the hand of labor to draw it forth and enhance its value a thousand fold; and nature opens the gateway by which this wealth may be sent to the remotest quarters of the globe, and the produce of other countries be brought into our midst.

Respectfully submitting the above,

I have the honor to be, sir,

Yours very truly,

(Signed)

WM. KENNEDY.

MARCH 25th, 1864.

1. HENRY JOHNSTON.
2. Carpenter and Cooper.
3. Winnipeg.
4. Have been in employ of Hudson's Bay Company 13 years, at York Factory on Hayes' River, Hudson's Bay. Left Stromness on 9th July, 1860, on the "Prince of Wales;" were five weeks and three days from Stromness to York Factory. Saw no ice on the way either in Straits or Hudson's Bay. Went home in 1865. Left York Factory on 21st September for London. Our passage occupied 31 days; delayed on account of contrary winds. Saw

SERIAL COMMITTEE REPORT.

no ice on passage. Came out again in 1875. Left Stromness on 9th July and took ten weeks and 3 days in voyage. Had contrary winds to entrance of straits, when we got outside a field of ice. Had to make fast to field and lay there until it broke up. The "Lady Head," our consort, got inside the field and was not delayed on the passage. Encountered ice a few miles inside Resolution Island. It was three weeks before the ice broke up so that we could find a channel. Don't remember thickness of ice. A steamer could have coasted round the ice. There was open water between the ice and the land on the north side of the Straits. After we got past this field of ice, found only small broken pieces, and finished voyage to York without further difficulty. The weather was very warm and fine; the water was quite smooth. Passengers were out on ice every day.

Have coasted from York Factory to Severn—280 miles on West coast of Hudson's Bay—in York boat. In month of July, saw no ice, fine weather. The water is shoal on the coast between York and Severn, only about ten fathoms water seven miles from shore. No shipping goes to Severn. Don't know soundings in Bay opposite mouth of Severn.

Do not know how far out the shore ice forms in winter, but could see the smoke rising from open water from York Factory, which is seven miles from the mouth of Hayes' River. The ice is generally out of the Hayes River by the 20th May. It does not clear out of the Nelson River so soon, as the tide carries it in and out until it rots. The Nelson is generally clear of ice by the 1st June. Ice does not form in mouth of Nelson River all the winter, or for seven miles up. There is floating ice carried in and out with the tide, but the mouth of the Nelson is open to Hudson's Bay all winter. That is my opinion. I never went out to see if such was the case.

The coast boats leave York for Churchill about the middle of June each year. They are open boats, about 30 feet keel, carrying 8 men and setting two sails. The coast is clear of ice before the shore ice is gone. They never leave until ice has gone. It is considered 180 miles across country from York to Churchill. It is not much farther by water, as the route follows the coast line nearly all the way. The coast boats return to York about the middle of July.

The general temperature about York Factory in winter is much about as it is here. I remember that on 'Xmas day four years ago it rained, and last 'Xmas day it was thawing all day. The water was running off the roofs of the houses. When we have a south wind for a day or two it becomes quite mild weather. The wind is stronger there than here, and prevails from the north and north-east. A south wind will flow the ice off the coast in Spring when the ice breaks up.

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I do not consider Hudson's Bay a stormy bay. There are squalls sometimes but not frequently. The severest storm there I remember was in the fall of 1861. The "Prince of Wales" was anchored off Ship River. She was not blown from her anchorage. The wind was about north-east. The schooner was out all night, and so was the packet boat, but neither was lost. The packet boat is about the same tonnage as the coast boats. It is an open boat, with two lug sails. The winds are stronger in winter than in the summer time.

(Signed) HENRY JOHNSTON.

26TH MARCH, 1884.

1. CAPT. JAS. HACKLAND,
2. Retired H. B. Co. Officer,
3. Headingly.

4. Has been employed by Hudson's Bay Company 39 years. First navigated Hudson's Bay in 1843, and was in command of H. B. Co's schooner for 16 years from that time. This schooner ran from York to Churchill, wintered at York. The rule was that we should be ready for coasting service on the 15th July, when the coast was supposed to be clear of ice. Could sometimes have navigated before, but our rule was safety. The bay at Churchill was not open usually before the 10th to 15th July. The water was open in Channel, but shore ice was fast for half a mile out until that time. The ice commenced to form at Churchill from 10th to 15th October, it was drifting ice, would not impede navigation of steamers. The vessel I sailed was 80ft keel, about 120 tons, schooner rigged was suited for navigating in ice.

Have been four times through the Hudson's Straits. Left Orkney 22nd June 1860, and passed through Straits about middle of July, was 30 days from Stromness to York, saw no ice on that occasion except at a distance to southward. Hugged north shore of Straits. In any trip I met no ice that we could not avoid, saw floating ice most times. Do not think that the ice would be any impediment to steamships following the route. The Straits are open all year round, never freezes, there is no reason why steamships should not navigate the Straits at any time. The ice from Fox Channel sticks among islands at west end of Straits. The ice from Fox Channel comes down in July. It never goes into Hudson's Bay, but follows current through Straits. The navigation of the western end of the Straits is, therefore most interrupted at that time.

The navigation of Hudson's Bay and Straits is not considered dangerous. There are no shoals, there are few fogs. During 16 years navigation of Hudson's Bay was never impeded by fog. Sometimes the vapor off the ice

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made the atmosphere cloudy for a few hours. Hudson's Bay is not a stormy sea.

The coast from York to Churchill is not at all dangerous. The bottom is generally either sandy or muddy, and gives good anchorage. Could coast along about five miles out where we got five fathoms water. The prevailing winds are about north west and N. N. W.

The ice forms out of Churchill coast about $1\frac{1}{2}$ miles from shore.

Wintered at Churchill five winters. The ice on river forms about $3\frac{1}{2}$ feet thick. The Churchill Harbor is clear of ice from 15th July to 15th October. Entrance to Harbor generally freezes over, but ice is not thick. Ice rises and falls with the tide.

(Signed.) JAMES HACKLAND.

1. CAPT. COLIN R. SINCLAIR.

2. Retired merchant navy.

3. Seven Oaks, Kildonan.

4. I was brought up at York Factory, where my father was chief factor. Went through the Straits first in 1824 or 1825; arrived in Stromness about the first week in October. Passage about five weeks. Saw no ice in Hudson's Straits. Had fair weather in Bay and Straits. In middle of April, 1844 or 1845 passed entrance to Hudson's Straits on a sealing voyage and saw no ice. The entrance to Straits was quite free. I have had opportunity of obtaining information from experienced persons as to navigation of Hudson's Straits and am confident that there is no unusual danger or difficulty attending such navigation that the appliances of modern science cannot overcome. Have been engaged in navigating northern waters for six years. Think that steam vessels are best suited for navigation amongst ice, as they can follow open channels irrespective of wind or current. Much of the preconceived opinion as to the difficulty of navigation arises from experience of slow-going sailors. Do not think that fogs are prevalent in Hudson's Bay and Straits. The same reason does not exist as on the coast of Newfoundland, as there is no headed Gulf Stream to encounter colder temperature of the northern waters, which is the cause of Newfoundland fogs. I have never seen fogs in Hudson's Straits. It is my opinion that three and a half to four months open navigation could be found through Hudson's Straits. The Hudson's Bay vessels never attempted to force their passage through ice. If they encounter ice they anchor to it, and wait until it breaks up. Such vessels are not calculated to form a test as to the practicability of navigation of the Straits. Do not consider naviga-

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tion of Straits dangerous where ordinary precaution is used. After the Eastern entrance the Straits is passed there would be no difficulty encountered by a vessel shaping a direct course to ports in great Britain. There would be no greater difficulty than in sailing from the Strait of Bellisle.

Think that York Factory (stage R,) cannot be made a good harbor on account of shifting channels which have to be buoyed afresh every season.

(Signed) C. R. SINCLAIR.

1. WM. STEVENSON,

2. Farmer,

3. Headingly.

4. Formerly five years in H. B. Co. service. Passed through Hudson's Straits in end of July, 1835, saw some ice but had no difficulty in avoiding it. Had fair passage through Strait, an open boat could have accompanied the vessel in safety. Wintered at York Factory 1835. Hayes River froze over about 20th November in that year, opened about 2nd June next spring. This was considered unusually late. The Chief Factor, Mr. Hargrave said he never knew it to be so late in his experience. Do not know how many years he had been there.

(Signed.) WM. STEVENSON,

1. WALTER DICKSON,

2. Formerly in H. B. Co. service.

3. Lake Francis.

4. Was 20 years in employ of H. B. Co. from 1853 to 1873, on East Main and between James Bay and Lake Superior. Have been requested to furnish information respecting Hudson's Bay to the Committee of the House of Commons at Ottawa. I have answered these questions substantially as follows. I lived for thirteen years on the coast of Hudson's Bay, and for seven years in the interior between James Bay and Lake Superior. I have had an opportunity of gaining information respecting Hudson's Straits from my long acquaintance with Esquimaux who reside about the Straits, and from my personal observation of the Bay itself. I have every reason to believe that the Hudson's Straits and a great body of the Bay proper, are navigable at all seasons of the year and afford no peculiar difficulty to ordinary

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navigation. I know a little about the country between Manitoba and the Hudson's Bay and a great deal about the country lying between the great lakes (Superior and Huron) and James' Bay, having travelled from James' Bay to points on Lakes Superior and Huron by canoe and otherwise and from having spent seven years in that region.

In my opinion there are no great engineering difficulties in the way of building a Railway from Winnipeg to Hudson's Bay rather the reverse, as much of the country to be traversed is very favorable for such a purpose, and wood for construction purposes is abundant. I consider that Hudson's Bay and Straits are open to ordinary navigation sufficiently long in each year to be utilized for ordinary commerce. I have seen all the shore of Lake Winnipeg, and know the interior for a considerable distance inland along its western side. It would, in my opinion, be much easier to build a railway on the western than on the eastern side of Lake Winnipeg. The western side, between Lake Winnipeg and Lakes Manitoba and Winnipegosis, offer many facilities for the construction of a railway. On the eastern side the country is generally rough and unproductive. The advantages to Canada generally of the opening up of communications, via Hudson's Bay, would be, 1st. Gaining access to a mineral region, which for richness, variety and extent is equal and perhaps superior to any other region on this continent. 2nd. Gaining access to whaling and sealing grounds that are already highly remunerative and are capable of great development. 3rd. Gaining access to salmon and other fisheries, to game in unlimited quantity and to the richest fur producing region in the Dominion. To Manitoba and the Northwest the route via Hudson's Bay is all important, giving them a shorter and cheaper route for both export and import than can possibly be had by any other route.

Churchill is the only real harbor at present known to me, on the west coast of Hudson's Bay. The other so called harbors, as at York Factory, being only roadsteads of a very low order, and not always safe. There are no harbors on James' Bay that can be classed as good, except for crafts of any light draft of water. The harbor at Moose Factory is a very indifferent roadstead. There are harbors on the east coast of Hudson's Bay, both along the mainland and among the sounds and islands along the coast, all are in tide waters. Churchill Harbor is slightly nearer to Liverpool than Montreal, and very considerably nearer than New York. At present no comparison can be instituted between Churchill and other ports on the west coast of Hudson's Bay, for, strictly speaking, there is no other port known there. I believe that Hudson's Straits are never frozen over in winter. My reasons are, 1st. That the latitude is too high, 2nd. That the current and tide are too strong to allow of a general freezing over at any time and 3rd. That the

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Esquimaux make use of skin boats and kyacks for ordinary hunting and travelling purposes in winter, and during a residence of 13 years amongst them I never heard of any Esquimaux crossing the Straits on the ice. Icebergs, properly so-called, are not formed in Hudson's Bay and Straits, nor can they get there so far as I am aware. The nature of ice found in Hudson's Bay is shore ice, generally from $2\frac{1}{2}$ to 3 feet thick and in many places along the coast is porous at all seasons. If fishing or sealing stations were established on the islands in Hudson's Bay proper, the Straits and much of the Bay would be available for navigation throughout the year, and Churchill harbor could be reached during five months at least of each summer. The idea of opening a route with this country via Hudson's Bay first occurred to me in 1858.

To my knowledge there have been fewer losses and disasters to shipping in Hudson's Bay and Straits than on any known route of travel during the past 250 years. I do not know the rate of insurance, but believe it to be less than average. I believe the Hudson's Bay Company have ceased to insure their vessels, deeming the route so safe as not so call for it. I am aware that two vessels belonging to the Hudson's Bay Co. went ashore at Mansfield Island, as I was in Hudson's Bay at the time, and from a passenger who was on board one of the vessels at the time of the disaster I was told the reason why the ships went ashore was not in consequence of difficult navigation or stormy weather, and is well understood to have been caused by neglect of duty. Hudson's Bay is less subject to storms than the great lakes. Hudson's Bay is from 1000 to 1200 miles in length, and its greatest breadth from 600 to 700 miles. A survey of the Bay is necessary in order to arrive at its true area. The shores are generally bold and rocky, in some districts rising into hills of considerable altitude. In the immediate vicinity of the sea the land is useless for agricultural purposes, but it is rich in a great variety of minerals. The shore of James' Bay is generally low and sandy, with a good deal of marshy land adjacent to the coast. Hudson's Straits are bold and rocky throughout, the southern side being generally more elevated than the northern. I think that very little is yet known about the country on either side of the Strait. Frost remains permanently in the ground at certain points on the coast. I think the temperature of the water in Hudson's Bay in July, August and September would be much the same as that of Lake Superior at the same dates, if not higher. In August, 1866, while travelling from Moose Factory to Great Whale River in a schooner, I found the temperature of the water ranging from 29° to 42° Fahrenheit. The temperature of the water is affected by locality, being higher near land than in the open sea. I made observations for many years for the Smithsonian Institute. The water of Hudson's Bay are the home of innumerable seals and Arctic or white whales that might be profitably hunted and fished. Many of the rivers abound in salmon

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and other valuable fish of superior quality, where great industries might be established. Cod, herring, and other edible fish are also to be had in Hudson's Bay. The country round Hudson's Bay is now the largest and best fur producing region in the Dominion, and abounds in game. Wild fowl of all sorts, reindeer or cariboo, &c., exist in such profusion as seems inexhaustible. The coast generally, particularly the east coast, possesses nearly all known economic minerals, many of them in apparently unlimited quantity, rendering this one of the greatest mineral regions in the world. The eastern coast of James' Bay possesses some valuable minerals, particularly iron, in great variety and abundance; gypsum, about Moose River, in any quantity, lignite coal, and vast quantities of good merchantable timber, such as spruce, white and red pine, etc., etc.

From what I have observed of the movements of ice in Hudson's Bay during the summers I passed there, I am perfectly assured that an ordinary iron screw steamer would never have any difficulty in getting through or round that which is usually met with in the Bay and Straits. The chief reason why the old sailing vessels of the Hudson's Bay Company often met with detention in the ice was and is that at the season when floe ice is met with there is generally very little wind, and sailing vessels are consequently as helpless amongst the ice as they would be in a dead calm in the centre of the Atlantic or elsewhere. Hudson's Bay has always been found of easy access to a good and careful navigator. The ice formed in Hudson's and James' Bays during each winter is only about the shores very variable as to extent, and so inconsiderable in quantity as to be almost lost in the great area of the Bays. I think it improbable that any of this ice finds its way to the Straits, getting broken up or dispersed by the action of the tide or wind in the vicinity of the islands, shoals or shores where it formed. The drift ice met with in Hudson's Straits comes from Fox Channel and other inlets of the northern shore of the Bay, and would be of little inconvenience to a steamer that hugged the northern coast of the Straits and Bay, as the bulk of the ice in question is impelled by the wind and current to the south shores of the Straits and some directly into Ungava Bay. From what is now known, and the experience already obtained on the subject, there is every reason to believe that were Hudson's Bay thoroughly surveyed, it would be found to be one of the safest of known seas. I have no doubt that if the present enquiry as to the navigability of Hudson's Straits and Bay and its resources is properly conducted and published, that the result will be of inestimable benefit to the Dominion generally, and prove the practicability of the one thing needful to the profitable existence, and to the complete developments of the resources of Manitoba and the North-West—a Hudson's Bay Route. In giving this opinion I quote not only my own experience, but the opinion of others who are similarly acquainted with that country. Have known season's when harbors were accessible for

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seven months in the year; about the year 1860 a canoe came from Moose Factory to Little Whale River in November, arriving at the latter place on the 15th of the month. There was no ice at that time in the Bay. Was trader with Esquimaux for many years, and they have told me that they have caught cod outside islands on East Main. Salmon are not caught south of Cape Jones, but are found in great quantity in rivers of East Main and in Churchill River, and rivers north of Churchill on the N. W. coast of Hudson's Bay. The development of the fishing industry in Hudson's Bay would form an inexhaustible source of revenue to this country. The American whalers and sealers at Marble Island have a permanent establishment where they remain all the year round fishing and trading with the Esquimaux, and deriving very considerable profits therefrom. If stations were established on some of the islands in Hudson's Bay, sealing could be carried on with the same success as on the coast of Labrador. It would be necessary that such posts should be on the islands, as, if on the coast, it would be impossible to reach the sealing grounds, as the ice does not break up until after the sealing season is over. The sealing season is early in Spring. There are both harp and hooded seals in Hudson's Bay. Fogs are not prevalent in Hudson's Bay. In my experience, fogs are less frequent than on lakes Huron and Superior.

(Signed) WALTER DICKSON.

1. CHAS. N. BELL.
2. Railway Agent.
3. Winnipeg.
4. Have never been at Hudson's Bay. Have compiled a book on Hudson's Bay and strait from authorities published on this subject accessible to me dating from the Journal of Hudson, the discoverer of the Bay in 1610, to the present time. Have copies of log books of American whalers, and letters from whalers sailing from New Bedford and other ports in the U. S., and from the Commodore of the "Dundee" whaling fleet. Most of the communications are embodied in "Our Northern Waters," which is the title of the book compiled by me. The result of interviews and letters from men who have lived on the shores of Hudson's Bay and Straits, and whose statements have never before been published, is also embodied in my book. Since publication of my book I have received further information bearing on the subject and hope to receive still more. I submit dates of opening and closing of Hayes's River at York Factory from 1828 to 1880. Dates of arrivals of vessels at York Factory from 1789, and at Moose Factory from 1735. These

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are published in the Dominion Geological Survey Report for 1880. I submit a letter from Capt. Adams, of the whaler "Arctic," of Dundee, who has had 35 years' experience in Northern waters—"a man of singular ability and of keen powers of observation"—says my correspondent:

"Ships may enter (Hudson's Bay and Strait) from the 20th to the 25th June almost yearly, and the straits remain open till the young ice forms about Oct. 26th. In round numbers the Straits are open four months a year, even when open navigation at eastern entrance is sometimes difficult, because the current from Davis' Strait carries ice across the mouths of Frobisher, Cumberland and Hudson's Straits. The ice is mostly 'one year's ice,' with Polar ice between, but in limited quantity. Bergs are numerous, but can be easily avoided. Open water is always to be found on North side of Strait, especially under Resolution Island when the wind is northerly, but sometimes, although open water can be seen under Resolution Island, this same wind, by tightening the ice, closes the entrance from the outside. In most years a steamer, although unfortified, may make the passage without fear."

Whaling vessels are strongly *fortified* with double timbering at bows and round the sides, to prevent their being easily crushed by the ice.

Since publication of "Our Northern Waters," I have procured a description of the harbors on the North shore of the Hudson's Straits, made by Capt. Coates, who was in the H. B. Co's. service from 1720 to 1751. The list is taken from a manuscript copy of a work called the "Geography of Hudson's Bay," and is given *verbatim et literatim*:

"Geography of Hudson's Bay," issued by the Hakluyt Society, 1852.

Edited by J. Banon, F. R. S.

Capt. Coates sailing H. B. Co. Ships, 1727-1751.

PAGE 11.

When we approach the meridian of Cape Farewell we dilate to southward into 58° or further to avoid ice, which hangs near the verge of the cape most of the summer, for the same reason we take care to get up to northwards into 61° 30' north latitude when past the cape, to avoid ice and a more sensible current near the Labrador coast.

Cape Farewell is in Lat 59° 49' N.

Cape Resolution 61° 30' N.

Long. 64° 30' W.

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You are carefully to avoid being entangled in ice before you have entered

Hudson's Strait. Ice which is hardened and washed that it becomes like solid stone, and, as the sea is more open, so you have a swell that runs many miles into it; add to this the tides and currents, which keep it in perpetual motion, that makes it very dangerous to hazard a ship amongst it before you get into the Strait at least twelve or fifteen leagues.

PAGE 14.

Lower Savage Islands are three larger and many lesser, about thirteen leagues above the Cape of Resolution, W.N.W. $\frac{1}{2}$ W. nearest easternmost of which in lat $62^{\circ} 05' N$.

Nix Compestress, or *Snowy Land*, is 28 leagues from the Cape of Resolution. Here the tides are more still and quiet, and not so rude or troublesome as lower down, when incumbered with ice.

Near this place is an island well called *Saddle Back*, near the shore, which we have thought may be a good harbor, but never was experienced.

Middle Savage Islands are a cluster of islands 42 leagues from the Cape of Resolution, W.N.W., and lie off from the main 6 or 7 miles, afford a fine sound between those and the land, but never experienced, for reasons best known to the Honourable Hudson's Bay Company.

Ice Cove is a most safe harbor, nine leagues to the W.N.W. of the great middle Savage Island, and good anchor ground, where I sheltered one ship from ice when I was hard pressed, it rose 28 feet water. It is barren and stony.

Grey Goose Island, within which is fine anchor ground, and you lie covered from all wind, but the tides both ways carry the ice through, which is the reason why I think *Ice Cove* preferable, being always still, and the island is about half way to *Ice Cove* from *Middle Savage Isles*.

North Bay on the White Straits. The shore a little to the westward of *Ice Cove*, declines to the Northward, and forms this Bay on mouth of this Strait, by opening a passage to northward of *Savage Point* of at least seven leagues wide, and so extends itself to westward nearly parallel to *Hudson's Strait*.

PAGE 16.

Savage Point, from what has been said, appears to be a large island, with those we call the *Upper Savage Islands*, forms a promontory. We steer for both ways, and where *Hudson's Straits* dilate to northward in going up, as it declines more to eastward in going down, whose latitude by many observations is $62^{\circ} 20' N$. It is west from the Cape of Resolution 63 leagues. It is east

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from the east end of Cape Charles 32 leagues. It is east from Cape Diggs 69 leagues. Its name is disputed, which is all I have to add. Some call it God's Mercies; and the Savage Islands is further to eastward. For my own part, this is name I received from my predecessors, and until I have reason to alter it, shall distinguish it by that name.

PAGE 18.

I must remark that the northern side of the Straits and northern parts of the Bay are generally cleared of ice first, but whether it is owing to more frequent northerly winds in the Spring of the year or a greater quantity of snow, or to an attraction of the luminaries, or all together, this is certain, there is a drawing current always to southward, although the winds sometimes produce a contrary effect.

PAGE 27.

TIDES.

Marble Island,	W.S.W.	moon makes	full sea 14 to 18 feet.
Churchill,	W.N.W. $\frac{1}{2}$ N.	do	14 to 18 do
Pt. Nelson Shoals, N.W. by W.		do	14 to 18 do
Nelson River & Hayes, N. W.		do	16 to 18 do
Albany Roads	N. or S.	do	8 to 18 do
Moose River,	S $\frac{1}{2}$ E.	do	7 to 18 do

PAGE 28.

I found all along the Labrador and East Main Hudson's Bay coast no tide at all; a constant current to northward; a precarious ebb and flow of two or three feet, and this entirely under the influence of the winds.

PAGE 29.

Near Whale Cove and Brook Cobham, it is agreed on all hands, there are such shoals of wales and seals as are nowhere else to be met with in the known world.

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Upon this fine island (Charlton, James' Bay) the Company had a warehouse many years in the time of the war, and sent but one ship annually from London. The goods were distributed to East Main, Rupert's, Moose and

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Albany. But this was also disused after the French had disposed them of all but Albany.

PAGE 64-66.

Cortes speaks of a lead mine at Little Whale River, lead ore and isinglass in many places at Great Whale River, and fish and fowl all along James' Bay and East Main.

I submit an extract from a book called "Discovery of a North-West Passage," published in 1748. The writer was the clerk of the ship "California," which, in company with the "Dobbs Galley," was dispatched by a company of merchant adventurers from England, for the purpose of looking for a passage to the Indies by way of the Northern Seas :

[EXTRACT.]

"DISCOVERY OF THE NORTH-WEST PASSAGE, 1748, BY THE CLERK OF THE SHIP 'CALIFORNIA.'"

VOL. I. PAGE 73.

"It commonly happens that in the month of September in passing the Straits you see little or no ice, the ice of that year being either melted or gone into the ocean, and there being no ice to come until the next Spring. Therefore it is to be questioned by some whether it would not be better to pass the Straits the latter end of April or early in May, as the Spring would be then just begun to the southward, and consequently not to the northward, for which reason less ice would be afloat, and therefore less to hinder the passage up the Strait. What is practiced by the Hudson's Bay ships is no precedent in the case; they going at a time when it most suitable with respect to their trade, which is not before the latter end of June, and their cargoes are not ready until July.

PAGE 74.

In passing this Strait the North Shore is kept to by all ships as being clearest of ice. The currents shooting over to the south and eastward, attracted by a bay at the back of Cape Charles, and of a much larger bay mentioned to the westward of the entrance to this Strait. When they arrive at the length of Cape Charles they usually stand over to the southward, as being the nearest course to go into Hudson's Straits, not that the Strait is not equally navigable between Salisbury and Nottingham and the main land as it is to the southward. There may be also another reason besides the nearness for the going to the southward of these islands, though that is reason sufficient, which is that the channel to the northward of Nottingham lies fairer to receive

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the ice that shall come down the nameless (Fox) and from Baffin's Bay, than the channel to the southward does.

Hudson's Strait is about 500 miles in length and varies from 45 miles to 150 miles in breadth, having an average of about 100 miles. The two narrowest points in the Strait are between Cape Best of Resolution Island and the Button Islands, at the eastern entrance, and opposite North Bluff, near the Savage Islands. Between Resolution Island and the mainland and on the north side of the Strait, there is a wide passage of some 10 miles, called Gabriel Strait. Button Islands, on the south of the entrance, are at least 10 miles from the mainland of Labrador. There are no less than three eastern entrances into Hudson's Strait; the first, 10 miles in breadth, between Resolution and the North Shore; the second or main entrance, between Cape Best and the Button Islands, 45 miles in breadth; and lastly, the several channels lying between the islands on the coast of Labrador, of which four are marked on Captain Beecher's chart, within a breadth of 10 miles. The steamers of the Company bound for Ungava Bay pass between the Button Islands and the mainland of Labrador.

As the prevailing winds are from the north or north-west, it is most probable that Gabriel Strait will be the one for steamers to take, as they will by that means escape the ice driven by the winds through the main or south entrances. It is stated that sailing ships are not taken in that way because the currents are very strong, and the north shore being very high they are liable to be becalmed and thrown on the rocky shore.

The difficulty of effecting an entrance in the summer with sailing vessels arises from the drifting floe ice, and the following extract from a work written by Capt. Beecher, R. N., in 1842, will serve to illustrate this point:—"George Best has given, in his narrative of the voyage, a formal dissertation on the general features of the mistaken straits of Frobisher, in which the proof that it was no other than Hudson's Strait must be looked for. We have already accounted for the ships having drifted down to the entrance of Hudson's Strait, and it appears that once within that entrance the progress to the westward was comparatively easy." A circumstance also observed by Sir Edward Parry, who says:—"We continue to gain a great deal of ground, the ebb tide obstructing us very little. Indeed from the very entrance of Hudson's Strait, but more especially to the westward of the lower Savage Islands, it was a matter of constant surprise to find our dull sailing ship make so much progress, when beating against a fresh wind to the westward."

Captain Bishop, now commanding the Hudson's Bay Company's vessel the "Prince of Wales," writes under date of 18th of March, 1881:—"My average passage from the entrance of the Strait to the head of the same has

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been about fifteen days, and about twelve days from thence to Moose, or in going to York about nine days."

One cannot have a very high opinion of the sailing qualities of the "Prince of Wales," the distance from Mansfield Island to York being 570 miles, and the time consumed in covering it, averaging nine days, shows an average day's sail to be 63 miles, or about $2\frac{1}{2}$ miles per hour, with deep water and no danger from shoals.

Captain Bishop's average, time home from York for the thirty-three voyages he has made was a little over four weeks. He is of opinion that the beginning of August is early enough for a vessel to attempt entering Hudson's Strait; where he differs from five American whaling captains whose opinions are quoted, for they agree that vessels can enter by the 1st of July. Capt. St. Clair, of New Bedford, said he had entered the Bay on the 13th of June, 1877, and the captain of the "Abbie Bradford" left New Bedford May 8th, 1878, and began whaling in Hudson's Bay on the 20th July, having that day "spoke" with the barque "Nile," boiling out their third whale of that season.

As to the dreams of of the last age, about the danger and difficulty of the navigation through Hudson's Strait and Bay, they are now out of the case. We know that this navigation is far from being perilous as it is represented.

"This is the more manifest from a fact, the truth of which is indisputable, and that is, the Hudson's Bay Company ships returning year after year without any disaster."

Capt. Ellis wrote the above in 1748, after returning from a voyage of two years to Hudson's Bay, when he had acted as agent of the proprietors of the two vessels, "Dobbs Galley" and "California." Part of the instructions he had received was: "In your passage through the Strait, keep nearest the north shore until you pass the Savage Islands."

Sir Edward Parry, when on his second voyage in search of a North-West passage, says, that on the 1st of December, in a bay of Fox Channel, where he wintered, while none of the "old ice" was visible, that part of the sea about there was covered with a very thin sheet of young ice, having spaces of clear water. In June of the following year the ice in their wintering Bay, where they sawed it, was four feet, and that on that date a good deal of ice was still attached to the land.

As the ice from Fox Channel affords the bulk of what passes through

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Hudson's Strait, it is important to know from an eminent authority like Parry, that as late as June the ice still remained attached to the shore, for it is evident that if it is there, it cannot be at the same time bothering ships in the Strait, and it points out, what many men who have been through the Strait early in June have insisted on, that the month of July is the worst of the whole year for entering the Strait, but the floe ice being more affected by winds than bergs, is acted on by the prevailing northern and north-western winds, as well as the southerly setting current, and we find in consequence, that in the words of Captain E. B. Fisher, who had sixteen years experience of whaling in the Bay since 1850, "there is always open water between the rocks and the great body of ice," on the north side.

The tides in Hudson's Straits rise from 30 feet to 40 feet, and run about six or seven miles an hour, and at every turn where there is ice, many authorities say that much breaking up occurs, and that steamers could take advantage of this while sailing vessels are at a stand-still. If the wind is ahead and blows anyway fresh, as the winds are in July and August generally "ahead" to vessels entering the Strait, it is seen why sailing vessels are so delayed.

Parry says the ice of one winter's formation was ascertained to be in June about four feet thick, so that we can have some idea of the floe ice which passes through the Strait, but as Fox (Northwest Fox, 1635) enters minutely into that question, it is perhaps better to take his statement respecting it. He says that he saw a few bergs the size of "a church," which he had no trouble in evading, and that the floe ice was seen as thick as eight or ten feet.

It is found on investigation that fully 750 vessels have passed through Hudson's Strait, and this does not cover, it is known, the whole number. The list includes British Troop-ships, Emigrant Ships, War Vessels of the English and French, (some of them carrying 74 guns) as well as ships bound on voyages of discovery, trade and whaling. As early as 1619, Capt. John Munck was sent by the King of Denmark, and he wintered at Churchill, a brass gun of his being taken out of the river some time about the date of the appearance of Fox in that harbor.

Dr. Bell obtained from the Company's Offices in London, a record, which, printed in his report, shews the date of arriving and sailing of their vessels at York Factory for 93 years, and at Moose Fort for 147 years. These lists show that in some years several vessels were sent in charge of British Men-of-War, and there has been almost every year during the past two centuries.

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ships of various classes and sizes navigating the Strait without loss, and it seems almost incredible that such a number of voyage could be made, extending over 274 years without the loss of over one, or as is claimed by some writers, two small sailing vessels.

It is said that the two vessels lost were chartered ships of the Hudson's Bay Company, and they met with mishaps in the ice. They were the bark "Grahame" in 1852, and the bark "Kitty," about 1850. The latter foundered in the middle of the Strait off Saddle Back Island.

It is but a comparatively short time since it was claimed that it would be impossible to navigate the St. Lawrence with steamships, and, indeed several steamers were lost in proving that it would be possible for an immense fleet to pass up to Montreal during each summer.

Many references might be made to the length of time vessels take in passing through the Strait in either direction, but sailing ships, and they for the most part from their build, very bad sailers, consume most of the time waiting for fair winds, which, in sailing west, are very few and far between. If they encounter ice, they would not be taken any notice of by steamers. Sailing ships must have fair winds, or they have to "ice anchor" in the lee of a large "floe" and bide their time. I have copies of several log books of American whalers which show that the out trip was made in the autumn, as follows :

Ship, Northern Light,	1862,	7 days.
" Andrews,	1863,	7 "
" Ansel Gibbs,	1864,	3 "
" " "	1868,	8 "

H. M. S. "Rosamond" returned through the Strait from the Bay in October, 1824, in three days, when they had been 25 days going in, and Chappelle shows the daily log, giving the cause of the delay to be the light or contrary winds and the other troubles which a sailing vessel experiences in these waters when there is any ice, even in such quantities as are unnoticed by steamers.

Umfreville, who, while in the service of the Hudson's Bay Company from 1771 to 1782, lived at the different forts about the Bay, wrote:—"If it be objected to this, that the vast quantities of ice in the Straits must impede a vessel, I answer that many years the ice is so insignificant in quantity as not to obstruct the passage of the ships in the least, and in those seasons when

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it is thickest, it is dissolved and dispersed in the ocean long before the return of the ships in September."

I sent through Mayor Logan to the Mayor of New Bedford, Mass., a list of questions I desired answers to, and he kindly responded and says that the following are given by reliable men, who have whaled in Hudson's Bay.

"Ice is generally met with before reaching Resolution Island at the eastern entrance to the Strait, and is seen at intervals from there to Mansfield Island, at the western end. Whalers are said to come from Fox Channel into the Bay, but no one knows how many whalers winter in the Bay. They never experience trouble from floating ice in the north of the Bay. The course in is on either side of Mansfield Island, after hugging the north side of the Strait. They do not know if the Strait ever freezes over, as they winter in latitude $65^{\circ} 30'$ N, in the Bay. The ice on an average freezes for three and sometimes four miles from the shore. A steamer would have the advantage of being able to pass through ice that will hold a sailing ship fast. Steamers could find open water on a passage through the Strait from July 15th to November 1st."

Lieut. Chappelle states as a reason for selecting the northern passage close to Resolution Islands:—"That entering Hudson's Strait, it is a necessary precaution to keep close in with the northern shore, as the currents out of the Hudson's and Davis' Straits meet on the south side of the entrance, and carry the ice with great velocity to the southward, along the coast of Labrador." (Dr. Bell.)

The following incident, related in Gunn's History of Manitoba, serves to illustrate how many of the fears of the navigation of the Bay were propagated:—In August, 1836, the annual ship from London to York Factory was driven from her mooring at the latter place by the storm, and the Captain instead of trying to re-enter the harbor, made sail with all the supplies of that year for the Red River Colony, back to England."—the reason given is that their anchor was lost.

The Lower St. Lawrence (notwithstanding its comparative narrowness) is partly open even in the middle of winter. But the difficulty, as in the case of the Hudson's Bay, is the apparent impossibility of getting into harbors. Harbors such as Churchill or York on Hudson's Bay, would have the advantage over Quebec or Montreal of connecting directly with the open sea, and hence in autumn vessels would not be liable to be frozen in, as occasionally happens in the St. Lawrence, as for example, in the autumn of 1880, also in the autumn of 1870, when the outward bound shipping got frozen in below Quebec, occasioning a loss, it was said, of over a million of

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dollars. Again, in the spring, there might be no more uncertainty about entering from sea than in the Gulf of St Lawrence, where vexatious delays are not uncommon after the open season is supposed to have arrived.

The Montreal harbor master, according to the United States report on commercial relations for 1878 (page 657), furnished a table showing the average opening and closing of that port for ocean-going vessels for twenty years to be:—Average opening 1858 to 1877, 1st May; average closing 25th November.

Summary of the opening and closing of Hayes' River, opposite York Factory for various years from 1830 to 1880, according to report of Mr. Wood, Government Meteorological Observer at York Factory:—

DATE OF OPENING.	DATE OF CLOSING.
1830.....	May 17.....
1835.....	December 2.
1840.....	November 18.
1845.....	“ 16.
1850.....	“ 24.
1855.....	“ 28.
1860.....	“ 24.
1865.....	“ 19.
1870.....	“ 20.
1875.....	“ 27.
1880.....	“ 15.
	“ 20.

The records of the Hudson's Bay Company, as presented to the Government in 1880, show that the Hayes' River at York Factory, for an average of 53 years was open on the 15th May. Only once in the 53 years did it remain closed till the end of May or first of June. Once (in 1878) the river closed as early as the 3rd of November, but the average closing for 53 years was about the 20th of November. It must be borne in mind that the Hayes' is but a small river in comparison with its neighbor, the Nelson, which is distant from it at York about six miles. The Nelson closes much later than does the Hayes', if indeed it can be said to close at all.

It is interesting, then, to note the comparison between the opening of the harbors of York and Montreal, though a fortnight is here given against York to clear the river and again in the fall when ice first forms:—

	MONTREAL	YORK.
Opening of harbor.....	1st May.....	1st June.
Closing of harbor.....25th Nov.....	10th Nov.

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This proves conclusively that the harbor at York is open and clear of ice for five and a half months of the year, and that vessels could approach docks between those dates. At a port on Nelson River these dates would likely be extended.

Dr. Nevins, on a trip to Moose Factory, met with considerable float ice in the southern part of the Bay near to James' Bay, and the "Prince Albert" had the experience, that he says a great many of the Company's vessels have, with contrary winds, and as an example of the ice that kept them floating helplessly with it for *six weeks*, I quote his words:—"She would sail for half-a-mile, or not even her own length, before she was again stopped, and this obstacle was removed only to make way for others which would detain us for hours." He explains that the sailors took poles and shoved aside the blocks of ice, and he describes it all as floe ice. Two weeks later the vessel passed through this same quarter, and did not see a speck of ice, nor did they meet with any obstructions in the Straits, and yet they were over seven weeks in going to London.

Chappelle made almost the same voyage with H.M.S. "Rosamond," in nineteen days, and his opinion of the sailing qualities of the Company's ships is given in this very plain and distinct language on page 26 of his book:—"It ought to be mentioned that we found ourselves much retarded by the bad sailing of the North-west ships, but a Moravian brig with us sailed well." This was on the voyage to the Bay.

It is with confidence that the assertion is made that the prevailing winds in the Strait come from the north-west, and that they are the chief cause of the trouble experienced by sailing ships. Parry, who wintered in Fox's Channel, in 1853-54, informs us that there were, during the year, 145 north-westerly, and 81 north-north-westerly winds, which would all be directly felt in Hudson's Strait. On only 34 occasions during the year did the wind blow from the south-east, so that it will be seen that sailing vessels have, as a rule, dead head winds as well as the ice to contend with in working up the Strait towards the Bay, and they cannot take advantage of the good deep water under shelter of the north shore owing to the danger of being drawn against the steep rocky banks that generally rise straight up from the water.

"The north-westerly winds prevail in these parts, it blows from the north-west quarter near nine months in twelve. If I was to give any directions for avoiding the thickest of the ice in the Hudson's Strait, it would be to keep pretty near the north shore, for we always observed that side much the clearest, as not only the winds blow mostly from thence, but currents too, come out of most of those large openings which are on that side." (Ellis, 1748.)

Chappelle states:—"Entering Hudson's Strait, it is a necessary precaution

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to keep close in with the northern shore, as the currents out of the Hudson's and Davis' Straits meet on the south side of the entrance and carry the ice with great velocity to the southward, along the coast of Labrador."

"It is well known, however, that the direction of the ice drift is much affected by winds, and that meteorological conditions have much influence in determining the position of the floe ice. Icebergs which can be avoided by a steamer are not much affected by winds, being directed by deep-seated currents, which, in Hudson's strait, according to Sir Edward Parry, carry the bergs to and fro twice as fast as the floe ice." (Hind.)

The work of the Smithsonian Institute on winds, shows that from all the records on file of the observations made by explorers in Hudson's Strait and Fox Channel, it is found that the prevailing winds are from the north-west (1854.)

"In passing through Hudson's Strait we could perceive none of the drift ice which was plentiful in our voyage outwards; it had been carried away to the ocean by the prevalence of the southerly currents." (Chappelle.)

Outside Hudson's Strait, in the Atlantic, ships come somewhat into the region of the Newfoundland fogs, but it is too far north to expect anything like the trouble caused by the meeting of the Arctic waters with those of the Gulf Stream, and which is such a source of danger.

Findlay says:—"The Gulf Stream is completely destroyed near Newfoundland by the south-west polar current, and not to be traceable any further." (Annual Record of Science and Industry, 1872.)

This matter is fully explained in Maury's Physical Geography of the Sea, which is the standard authority on the subject. Plate 9 shows very distinctly that the cold waters from the Hudson's and Davis' Straits reach down to latitude 45, and east to longitude 40 west, before meeting with the Gulf Stream.

Maury, speaking of this, says:—"By its discovery we have clearly unmasked the very seat of that agent which produces the Newfoundland fogs."

Now no such influences are at work in the Hudson's Strait or Bay, except possibly, where the warm summer water of the Bay mingles with that of the Strait, and it is fortunate that reports show that no trouble occurs at that point from fogs, and that one of the great advantages the Bay offers to navigators is the immunity from them as well as shoals and reefs; the islands and shores showing great depths of water close up.

Captain Middleton, who had made twenty voyages into and about the

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Bay up to the year 1743, writes under date of that year :—“ And then as to observing the latitude in foggy seasons, I have seldom missed two days together, if it be tolerable smooth water, as you will find in our journals.”

This is a particularly important statement coming from a man who was then accused by opponents of the Hudson's Bay Company as working and writing entirely in its interest, and with suppressing anything favorable to the navigation of those waters.

The following taken from Chappelle, an officer of H. M. S. “Rosamond,” who convoyed the ships of the Hudson's Bay Company into the Bay during the war of 1814, may better explain why we have such a difficulty in procuring correct and authentic charts of these waters :

“ Nothing can be more incorrect than the chart supplied me by the Admiralty for the guidance of a man-of-war in Hudson's Strait, it absolutely bears no resemblance to the channel of which it is intended to be an exact delineation. During the time we continued in Hudson's Strait, the “Rosamond” was entirely piloted by a chart belonging to the Chief Mate of the Prince of Wales, and one of his own making ; yet he was so jealous of his performance, that he was highly offended at our masters having endeavoured to take a copy of it ; and from thence forward kept his chart carefully locked up.

“ When I questioned him, with some freedom, on this mysterious conduct, the selfish motive stood at once confessed, he feared lest, from others attaining the same knowledge as himself, they might be induced to enter into the service of the Company, and thereby possibly supplant him in his situation. And such I found to be the motives which induced the majority of these experienced seamen to keep their truly valuable information concealed within their own bosoms.

“ An idea may be had of the correctness of the latest Admiralty chart of the North Atlantic when we find the *head of tide* in the St. Lawrence River, is placed at *Ogdensburg, N. Y., and Prescott, Ontario*. It is no wonder that we are told that the information in the hands of the Admiralty shows that navigation in Hudson's Bay is only open for six weeks or two months.

“ The Ministry of Marine and War. of France, have large and extensive charts, maps, profiles, etc., of the coast of Labrador, Hudson's Strait and Hudson's Bay. Some of these may now be seen in the archives of the department in a building facing on the Place de la Concorde, Paris. The charts and profiles are on a very large scale, and are most comprehensive.

“ Many people labor under the impression that York Factory is on the

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Nelson River. This is likely caused by the imperfect and incorrect maps current, which do not show distinctly that it is on the Hayes' River, which flows into the Bay, and whose outlet is divided from that of the Nelson by a bar or tongue of land projecting out into the sea, called Beacon Point. It was supposed by the early navigators to be a branch of the Nelson, and indeed I find Dodds speaks of "York Port on the southern branch of the Nelson River." (1748).

"In 1782, La Perouse, the French Admiral, with a seventy-four-gun line-of-battle ship, and two frigates of thirty-six guns each, anchored at the mouth of Nelson River, not finding sufficient water in Hayes' River. He landed 250 men, mortars, guns, and provision for eight days. (La Perouse voyages, page 42).

"Certainly these were large sized vessels to be in those waters, and it proves that the French considered the taking of the forts a matter of importance, and also that the water at the mouth of the Nelson was of a good depth.

"I took the temperature of the sea upwards of twenty times during our voyage (about 550 miles north of Moose on the east main coast), which extended over the greater part of July, August and September, and found it to average 53° fah. I also noted the temperature of the rivers we visited, and found that the average of five of them was 61° fah. We bathed in the water almost daily, and found the temperature agreeable. We saw no ice, with the exception of a little 'bay ice' at the commencement of our journey, which had been driven into the neighborhood of the mouth of Moose River, after northerly winds had prevailed for many days. There was very little rain, and only two or three days of fog. Average temperature of the sea at three or four feet below surface for trials during three months was 53° and of the air 62½°. These observations were taken at various hours between 7 a. m. and 9 p. m." (Dr. Bell 1877).

"In the autumn of the same year (1864), the schooner "Martin" arrived at Moose Factory from York with a portion of the cargo of the "Prince Arthur," about the end of October. She reached Moose Factory just in time to be hauled up out of the fast forming ice." (Letter of Charles Horetzky, lately in the Hudson's Bay Company's service, to Col. Dennis, 4th Nov. 1878).

"Prof. Hind gives us some very valuable data respecting the influence of the sun during the long days experienced in these northern regions, and I give a table prepared by him:

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TABLE SHOWING THE SUN'S RELATIVE INTENSITY, AND THE LENGTH OF THE DAY IN LATITUDES 40° N., 50° N. AND 60° N.

	Latitude 40° N.		Latitude 50° N.		Latitude 60° N.	
	Sun's Intensity	Length of Day	Sun's Intensity	Length of Day	Sun's Intensity	Length of Day
May 1	80	13.46	77	14.30	70	15.44
“ 16	85	14.16	83	15.16	79	16.56
“ 31	88	14.38	87	15.50	85	17.56
June 15	90	14.50	89	16.08	88	18.28
July 1	90	14.46	89	16.04	88	18.18
“ 16	87	14.34	86	15.42	84	17.42
“ 31	84	14.08	81	15.04	71	16.38
Aug. 15	79	13.36	74	14.18	68	15.24
“ 30	72	13.02	65	13.28	57	14.08
Sept. 14	65	12.22	58	12.32	46	12.46
“ 29	57	11.44	47	11.36	36	11.26

“The conditions required for the adaptation of a certain area to agricultural purposes, apart from altitude above the sea and the character of the soil, are generally reduced to two, namely, the mean temperature of about 90 days, as during the summer or growing months, and the degree of humidity during that period.

“There are, however, two other conditions which exercise a very great influence upon vegetable growth throughout an area extending over many hundred miles to the north. These are the measure of the sun's intensity as regards light and heat, and the duration of the length of the day. As we move from Manitoba, say in lat. 50° to Peace River in lat. 56° (or York in 57°), this important fact has to be noticed that the length of the day in summer increases in a greater ratio than the sun's intensity of light and heat diminishes. It is not heat only that affects the growth of vegetation, it is also the duration of solar light in the day. The longer the day the greater the total amount of heat and light which will be received by vegetables.”

“Look at the table and you will see that in lat. 40° the sun's intensity is 88, on May 31st, the day being 14 hours 38 minutes long. In lat. 50° the sun's relative intensity of light and heat on the same day, is 87, but the day is 15 hours and 50 minutes long. In lat. 60°, the sun's intensity on the 31st May, is represented by 85, but the day is 17 hours 26 minutes long. The day

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is widely different in length, and the heat and light have a longer time to act on vegetation under the more northern meridians.

"Mr. Archibald, who lately lived seven years at Moose Factory, states that 20 to 30 cows and about 50 head of steers and young cattle, 20 to 40 sheep, 4 horses (imported from Scotland), and any quantity of pigs and fowls are kept there.

"Horses and cattle were kept at Churchill in 1733, and the small herd now kept there is recruited by raising the animals calved at the fort itself, though formerly ignorance prevented any attempt being made to breed stock on the spot.

"Robson states that the horses there had been kept several years previous to 1733, and were constantly employed in drawing stones, etc., for the building of the fort.

"Dr. Bell reports that about 80 head of cattle are now kept at Moose Factory. While there is no probability that the districts immediately bordering on the Bay will ever be considered as agricultural localities, yet it is worthy of notice that vegetables as well as some sorts of grain, can be grown for local demand.

George Gladman was in the Company's service from 1841 to 1845, and he testifies that when he wintered at Eastman House, on the east side of the Bay:—"Though the climate is not so good as at Moose Factory, raised good potatoes, turnips and other vegetable, nevertheless; soil sandy. Station much exposed to bleak north-west winds off the sea. A large herd of cattle kept there at that time, an abundant supply of hay being made in the salt marshes on the shores of the Bay. Vegetables grew wild on the point of the river, abundance of wild strawberries and currants. Resided at Moose Factory 15 years; much sheltered from northerly winds; climate and soil good; raised potatoes and other vegetables there in great abundance; barley ripened well; small fruits, as currants, gooseberries and raspberries, plentiful; grow wild; never knew wheat tried, the season being too short; horned cattle, horses, sheep and pigs kept there; all housed in winter. Albany Fort, 100 miles further north, does not differ from Moose in regard to soil and climate, being well sheltered, the marshes on the coast furnishing an abundant stock of fodder for domestic cattle. Was at Oxford House. Experienced no difficulty whatever in raising vegetables; had potatoes to spare for York Factory and for the Indians."

For half a century, at least, the north-western part of Hudson's Bay has been regularly frequented by a large number of American whalers, and, I am told by whalers from Dundee and other Scotch ports,

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An inspection of the report of the United States Commissioner of fish and fisheries for 1775-76 fortunately gives us some information as to the extent of the whale fishing in Hudson's Bay. That report shows that between the year 1861 and 1874 American whalers made about 50 voyages, giving an average of rather more than four vessels for each year, and the average catch annually, amounted in value to \$124,000 worth of that fish. The total of the eleven years' catch amounting to \$1,371,023.26. There being 22,241 gallons sperm oil, 804,265 gallons whale oil, 399,729 pounds of whalebone. It is also to be remembered that the returns submitted are those of very recent date. In all the early history of American whale fishery, Davis Strait was a favorite whaling ground, and vessels appear to have gone into Hudson's Bay and out again into Davis Strait, but the records of their catch are given as being generally made in Davis Strait.

"My comfort is that the quantity of whales and sea-mors that place affordeth, will, when whale-oil comes into request, drive the merchant to send the mariner to visit the isle of Brooke-Cobham." (Fox 1635).

Fox predicted exactly what has come to pass, for at Marble Island is the chief whaling ground of the Americans, who now have an average of at least four vessels each year at that place.

It is therefore positively proved that the whaling grounds of the Bay are exceedingly valuable and a source of profit to our American cousins.

It may be interesting to some to know that the whalers wintering in Hudson's Bay are in size from the "Isabel," of 95 tons, to the "Northern Light," of 513 tons.

The "Pioneer," in 1864, left home on the 4th June and returned 18th September, same year, with 1,391 barrels oil and 22,650 pounds of whalebone. Her cargo sold for \$150,000. That same year the value of cargoes taken out of the Bay amounted to \$427,638.86.

The above figures are from the report of the United States Commissioner of fisheries.

"Salmon are in some seasons very numerous on the north-west side of Hudson's Bay, particularly at Knapp's Bay and Whale Cove. At the latter place I once found them so plentiful, that had we been provided with a sufficient number of nets, casks, and salt, we might have loaded the vessel with them." (Hearne 1796).

The steamer "Diana," owned by the Hudson's Bay Company, is a refrigerator vessel, and as regularly in the trade to Ungava Bay. She takes cargoes of fresh salmon to England, where it is sold for from 1s. 6d. to 2s. 6d. per pound. Some of her cargo has has been re-shipped on to Australia.

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The Geological Reports of 1879-80 give very encouraging prospects of the likelihood of valuable minerals being found about the Bay. I quote from the reports of the above named years.

“Minerals may, however, become in future the greatest of the resources of the Hudson's Bay. Little direct search has as yet been made for the valuable minerals of these regions. In 1875 I found a large deposit of rich ironstone on the Mattagaini River. In 1877 inexhaustible supplies of good manganiferous iron ore were discovered on the islands near the east main coast, and promising quantities of galena around Richmond Gulf, and also near Little Whale River, where a small amount had previously been known to exist. Traces of gold, silver, molybdenum and copper were likewise noted on the east main coast. Lignite was met with on the Missinabi, gypsum on the Moose, and petroleum—bearing lime—stone on the Abitibi River. Small quantities of anthracite and various ornamental stones and some rare minerals were collected in the course of our explorations around the Bay. Soapstone is abundant not far from Mosquito Bay on the east side, and iron pyrites between Churchill and Marble Island on the west. Good building stones, clay and limestone exist on both sides of the Bay. A cargo of mica is said to have been taken from Chesterfield Inlet to New York, and valuable deposits of plumbago are reported to occur on the north side of Hudson's Strait.” (Dr. Bell.)

Many of the navigators of the past century mention the finding of minerals.

Mr. Hoffman chemist of the Geological Survey of Canada, analyzed a specimen of anthracite, from Long Island, on the east coast, with the following result :—*

Fixed Carbon.....	94.91
Volatile combustible matter.....	1.29
Water.....	3.45
Ash.....	0.35
	<hr/>
	100.00

Mr. Hoffman reported also on the composition of the Moose River lignite as follows :—“A piece of this lignite immersed in water for over three days, remained apparently unaffected ; it had not disintegrated nor imparted any coloration to the water.

This specimen having been kept in the laboratory for months, may be

*Geological Survey, 1876, page 423.

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regarded as having been thoroughly air-dried. Two proximate analyses by slow and fast cooking gave :

	SLOW COOKING.	FAST COOKING.
Fixed carbon.....	45.82	44.03
Volatile combustible matter.....	39.60	41.39
Water.....	11.74	11.74
Ash.....	2.84	2.84
	100.00	100.00

Dodds informs us that in 1744 it was customary to kill 3,000 geese for the winter at Albany Fort, and the Right Rev. David Anderson testified before the British House of Commons Committee, in 1857, that in one year he visited Fort Albany, in Jame's Bay, they killed twenty thousand (20,000) wild geese and then stopped.

When Sir Thomas Button wintered at Nelson River, during the winter "they killed no less than 1,800 dozen of patridges and other fowl."

Hearne says at Churchill they used to kill 5,000 or 6,000 geese in the spring. At York they have salted 40 hogsheads and at Albany 60 hogsheads of geese, besides great quantities of plover. He describes ten different species of geese as frequenting the Bay.

It is thus seen that the statements made by men, many of them officers in the H. B. Co's. service long years ago agree in every particular with those made in the present day by persons who have lived about the Bay or sailed on its waters.

It is safe to say that from the evidence now on record the following conclusions may be come to :

We have in the very heart of our Dominion an immense inland sea which never freezes over, it is connected with the Atlantic Ocean by a wide passage which never freezes over and is open for navigation for at least five or six months if not during the whole year. This great body of salt water has emptying into it a large number of rivers, many of them navigable for large river steamers for long distances inland, they are well stocked with the finest edible fish, and in some places their banks are clothed with timber, much of which is valuable for export. The islands of the Bay, and many localities on the mainland are rich in mineral bearing rocks and forms of coal. The northern waters are frequented by schools of whales which are already affording a bountiful harvest to the enterprising whalers. At all points in the great Bay porpoises abound, which supply hides and oil. Furs are obtained from the full list of fur-bearing animals frequenting the adjacent country.

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Large game supports, in a great measure, the Indian population. Feathered game is so plentiful that at a single post, 36,000 geese are killed in the Autumn as the year's supply. Vegetable are raised at all the forts in the southern part, and at some of those in the north, horses, cattle, etc., are kept, and an abundance of fodder is found for them. At least three harbors are frequented by ships, and for 54 years sailing vessels of all descriptions, from the pinnace of 20 tons to the 74 gun man-of-war, have anchored in them after passing through the Strait and across the Bay. British regular troops and immigrant have sailed through these waters and landed at these harbors.

Should we not, as Canadians, anxious for the full development of the great natural resources of our country, take what nature offers us so freely and make use of her bountiful gifts.

CHARLES. N. BELL.

COMMITTEE ROOM,

Saturday, March 29th, 1884

A special meeting of the Committee was held at 10:00 A.M.

Present, the Hon. C. P. Brown in the chair, the Hon. the Speaker, Dr. Wilson and Mr. Leacock.

The examination of Duncan MacArthur, Esq. was undertaken and concluded.

The Secretary was authorized to ask the attendance of the following persons, viz:—

C. J. Drummond, Winnipeg
Capt. M. Marcelliot, Brandon.

(Sd,) C. P. BROWN
CHAIRMAN.

MARCH 29th, 1884.

1. DUNCAN MACARTHUR,
2. Banker,
3. Winnipeg.

Am the representative in Winnipeg of the Nelson Valley Railway.

SPECIAL COMMITTEE REPORT.

Company, chartered by the Dominion Parliament to build a railway to Hudson's Bay.

My associates in procuring the charter are the Hon. Thomas Ryan, who is the chairman of the Company, the Hon. John Hamilton, Hon. Wm. McDougall, Peter Redpath, Esq., George A. Drummond, Esq., Alfred Brown, Esq., Alex. Buntin, Esq. and one or two others, who with myself constitute the Board of Directors. These gentlemen are prominent business men in Montreal, and control a large amount of capital. The Company has been regularly organized, and the stockholders have paid up the first call on its stock as prescribed under the charter. Large sums have been expended in preliminary surveys of the line of route between Winnipeg and the mouth of the Churchill River, the proposed terminus of the line on Hudson's Bay. The information derived from the Engineers proves that no serious difficulties of an engineering character are to be met with on the line of route. The Engineers have furnished field-notes and profiles of the reconnaissance surveys already made. A part of these reports have already been made public through the Winnipeg newspapers.

Repeated efforts have been made to amalgamate with a Company holding a Dominion charter, and called the "Winnipeg & Hudson's Bay Railway Company," but so far without success. The only obstacle that presented itself, before negotiations were broken off, was, that the Company represented by me desired to give the enterprise a Provincial character, and to place the control in the hands of the representatives of the people of Manitoba, which was unacceptable to the holders of the other charter. It was considered desirable to give the enterprise a Provincial character, because the immediate carrying out of the scheme was of such vital importance to the Province that our Company was desirous to see the control placed in safe hands, in order to prevent its passing into the hands of speculators or others whose interests would not be identical with those of the people of Manitoba and the Northwest. The prospects of obtaining capital for carrying out the project are good. A number of British capitalists are already enlisted in favor of the enterprise. I consider the negotiations for amalgamation with the Winnipeg & Hudson's Bay Railway Company are at an end, as the representatives of that Company have declined to concede to the Province that which we stipulated as essential to amalgamation. I think that our Company would be prepared to renew negotiations for amalgamation if the rights of the Province, in so far as control of the future of the Railway are concerned, were effectually provided for, but not otherwise. It is the intention of our Company to proceed with the construction of the road. The estimate furnished by our engineers is about \$20,000 per mile for construction without equipment.

SPECIAL COMMITTEE REPORT.

This estimate would be doubtless reduced when location is made, but as it is prudent to over-estimate, rather than under-estimate, in a large enterprise, I think it advisable to submit this figure. I think it would be very important for the Provincial Government to make an independent exploration of the routes suggested, in order that they may be in a position to form a judgment as to which route it would be most in the interests of the Province to adopt, should they be asked to assist the undertaking.

This investigation should extend itself to the character of the harbors, and the comparative dates of opening and closing of the same.

D. MACARTHUR

COMMITTEE ROOM,

31st March, 1884.

The Committee met at 10:00 A.M.

Present, Hon. C. P. Brown in the chair, Messrs. Leacock, Harrison, Gigo and Davidson.

The minutes of previous meeting were read and confirmed.

The evidence of Mr. W. A. Archibald and Capt. W. Robinson was taken.

The Secretary was authorized to report to the House and ask leave to sit again.

(Sd.) C. P. BROWN.

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1. W. A. ARCHIBALD,
 2. Formerly seaman and employee of H. B. Co.
 3. Customs Freight Shed, Winnipeg.

Lived 7 years at Moose Factory, on an Island in Moose River, James' Bay. The roadstead is nine miles from Moose Factory in tide water. The depth of water at Moose Factory is only six feet at high water.

Sailed from Stromness 3rd July, 1868. Arrived at Moose Factory about

SPECIAL COMMITTEE REPORT.

middle of August. Met a little ice about a day and a half sail after entering the Straits. We were not detained by it, although in consequence of a head wind we had to tack through it. We also met ice at N.E. end of Mansfield Island, and were detained for two hours by the wind failing us; when the tide set out the ice opened and we got through without difficulty. This was somewhere about 1st August. Kept no record and quote from memory. Saw no icebergs. The ice was pretty well broken and rotted at the time we passed through. Was whaling in Davis' Straits in 1867. Reached Davis' Straits in April. The vessel I was in was the "Wildfire," of Dundee, a propeller of about 600 tons burthen. We were seven months and three days on voyage; our trip back only occupied about eight days. Was not in sight of Hudson's Strait going or returning. We had no difficulty or delay in ice on our outward voyage, and only six days detention on our homeward voyage. Were jammed in by ice closing around us when going about half-steam in a sound, through which there was a narrow channel of open water. There were four or five vessels ahead of us, which all got through, but the one immediately ahead was very slow and blocked us.

Our rule was in going through ice, if it was in large floes to pass round it, sometimes anchoring until the pack opened,—if loose pack ice we ran right through it. We did not turn out of our course for any ordinary ice. Did not meet very much ice in going up Davis' Straits and when we returned we found no loose ice at all except in the sound where we were detained. Saw about 20 or 30 icebergs but we could always keep clear of them. When going up the Straits we encountered a strip of ice that seemed fast at both ends and was about 300 yards in width. There were eight steamers in our fleet; while the others made fast to the ice the largest vessel backed up and ran at the ice at full steam, shutting off steam just as it reached the ice. Her bows were forced up on the ice by the impetus and her weight broke a channel through. Think the ice was about six feet thick.

The mate of the "Lady Head" told me that the captains of Hudson's Bay vessels would not go out of their usual tack, even if they sighted open water in other channels if they had no charts of them. I saw no fog during my passage through the Straits and Bay. The conditions for producing fog do not exist in those waters. When in the ice we were detained a short time by the vapor from the ice. From my knowledge and from what I have heard from experienced persons, I think the navigation of Hudson's Straits and Bay is open to ordinary vessels for four months certainly, and in most years five months in every season.

(Sd.) WILLIAM A. ARCHIBALD.

SPECIAL COMMITTEE REPORT.

1. CAPT. WM. ROBINSON.

2. General Manager N. W. Navigation Co., Winnipeg.

Am General Manager of the North West Navigation Company. Have commanded a vessel on Lake Winnipeg for six years. The navigation of the Red River is interrupted at St. Andrews by boulders and shallows over a shelly rock bottom. Think this obstacle can be removed by dredging. Think the dredge at present building at St. Boniface could deepen this channel. In that case vessels drawing ten feet of water could run to Winnipeg during the whole season. I have been told that it is the intention of the Dominion Government to use the dredge for this purpose after having deepened the channel at the mouth of the Red River and improving some of the harbors on Lake Winnipeg. Low water commences about nine miles from here and extends at intervals for about five miles; in other parts of the river the depth at low water is about 22 feet. During the spring floods we can run to Winnipeg and Emerson. Can calculate on about three months of good water. At the mouth of the Red River there is a sand bar about 1000 feet in width which will be dredged through this season. After leaving the mouth of the Red River there is no obstruction to navigation for vessels drawing 10 to 12 feet of water, as far as the head of Lake Winnipeg. There are good sheltering harbors all along the Lake. I consider it the safest of all the larger Canadian lakes for towing purposes. The lake is sometimes stormy, and requires good strong vessels, but the seas do not run high. Limestone Bay, at the head of Lake Winnipeg, is about four miles in depth, and has about 12 feet of water at the mouth; it is deeper inside. It is considered a very safe bay. Think it would make the very best terminus for lake navigation as a part of the route to Hudson's Bay.

I think that if a combined water and rail route were established from the head of navigation on the Red River to Hudson's Bay, that a very large traffic would be created. Barges drawing six feet of water could be towed from Grand Forks to the head of Lake Winnipeg safely, which would save transshipment. They would require to be made stronger than the ordinary river barge. Such a barge would carry about 500 tons, or about 15,000 bushels of wheat. The barges from Winnipeg might be much larger, and have a capacity of 1500 to 2000 tons. From what I have heard from many persons living in the State of Minnesota and Dakota Territory, shippers would be only too glad to avail themselves of the improved river and lake navigation, and ship their wheat *via* Hudson's Bay if a railway were built for the purpose. Think that a grant will be made by the U. S. Government for improvement of the Red River from Grand Forks to the boundary line. There are six steamers now plying on Lake Winnipeg, three large and three smaller, and seventeen barges, some of which are of 500 tons capacity, and have been running for three

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seasons between Winnipeg and the Saskatchewan River and to Norway House or Warren's Landing at the mouth of Nelson River. Have gone from the mouth of Red River to Saskatchewan Landing in 32 hours with a tow, and without a tow in 28 hours. The period of navigation commences on the river about the 20th April, and at the southern end of Lake Winnipeg a month later. The north end of Lake Winnipeg does not open until about the first June. The season closes on Lake Winnipeg about the 15th November, at which date a little ice may be met with on the rivers, but none on the Lake; any steamboat can run through the ice up to that time. If the trade demands it, it would be advisable to build a larger class of vessels than are at present used. Steam barges, such as are used on the great lakes, could be used with advantage, towing others of equal capacity.

Sometimes the ice lingers in the Bay at the mouth of the Saskatchewan River for two weeks after it leaves the north end of the lake. Limestone Bay, or Warren's Landing, would, therefore, be accessible earlier than the mouth of the Saskatchewan River.

WM. ROBINSON.

COMMITTEE ROOM,

April 2nd, 1884.

The Committee met at 10 A. M.

Present, Hon. C. P. Brown, in the chair, Messrs. Gigot, Davidson, Woodworth and Dr. Harrison.

The minutes of previous meeting were read and confirmed.

The evidence of the following witnesses was taken.

Ven Archdeacon Cowley,	Dynevor.
James Hargrave Esq.,	Medicine Hat.
C. S. Drummond Esq.,	Winnipeg.

As an evidence of the great value of the seal fishery, the Secretary brought to the notice of the Committee the following extract from the Associated Press despatch of the 31st ult:

BIG SEAL CATCH.

St. JOHN, Nfld., March 31. The sealing steamer "Aurora," is just from the ice fields with 28,000 prime seals worth \$60,000 all taken in five days.

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The voyage only lasted eighteen days, Other sealers were equally successful.

The Committee rose and reported.

(Sd.) C. P. BROWN,
CHAIRMAN.

1. JAMES HARGRAVE,
2. Merchant,
3. Medicine Hat.

Was at York Factory on Hudson's Bay from 1867 to 1871 in the employ of the Hudson's Bay Company. The Nelson River opens in spring about 10th June and closes about 1st November. Steam vessels could navigate for two weeks longer in the fall. The mouth of the Nelson River freezes for about 15 miles from shore owing to the shallowness of the water. This ice is, however, constantly broken up by the wind and tides, the ice floating backwards and forwards in the Bay. The crossing place when it is considered safest to cross, is 12 miles from the mouth. I think the packet crosses about eight miles up on the road to and from Fort Churchill. Have heard the captains of vessels and sailors say that the Hudson's Straits are navigable all the year round. There is less floating ice in the Bay in winter than during the earlier part of the summer. Never saw any fogs during my residence on Hudson's Bay. Have seen vapor from the ice when the warm air came in contact with a colder stratum forming a light mist which would clear off in a few hours. Have been about twenty miles up the Nelson River, the water is deeper at that point than at the mouth. I have always heard that Churchill is the best harbor, from the captains and sailors of the H. B. Co's schooner which used to ply between York and Churchill and from residents of Churchill itself. They say that it is a natural harbor and has sufficient depth of water to float large craft. From what I know of the route between York Factory and Winnipeg I do not think it would be difficult to construct a railway to Hudson's Bay. There is plenty of timber suitable for making ties along the line of route.

(Sd.) JAMES HARGRAVE.

1. Archdeacon Cowley.
2. St. Peter's Parish.
3. Dynevor.

Have passed through Hudson's Straits three times in coming to and

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going from this country. My first trip was in 1841. We left England in June arriving at York Factory about the middle of August. Were delayed for sometime at Stromness taking in supplies. Saw some ice in passage of Straits but were not detained on that occasion. Three ships came through at same time without detention. The ice was broken field ice. My second trip was in 1855. We left York Factory towards the end of September. Do not remember that we saw any ice at all. Were not delayed at all. In 1856 we left England in June, and arrived at York late in August. Saw some ice and were detained about two hours during our passage of the Straits. A steamer could easily have avoided the ice on that occasion. Think a steamship properly prepared for such navigation would have no difficulty in Hudson's Straits at any time of the year. We had stormy weather off the Greenland coast on one occasion, but no bad weather either in the Straits or on Hudson's Bay. Saw no fogs at any time on Hudson's Bay or Straits to my recollection. Never resided on Hudson's Bay.

(Sd.) ABRAHAM COWLEY.

1. C. S. Drummond,
2. Financial Agent and Vice-President of the North-West Navigation Company,
3. Winnipeg.

Am interested in the carrying out of the Hudson Bay Railway scheme, and during the time I was in England in January last I conversed with many persons in Liverpool and London as to the project. I also met in London some gentlemen from Berlin and conversed with them. The opinion of all with whom I conversed was that the Straits and Bay were navigable for powerful steamers the whole year round, except perhaps during the period from the 15th May to 15th July, and even then they supposed the navigation to be difficult, but not impossible. There is a strong syndicate formed in Liverpool in which are some of the largest steamship companies who are willing to furnish vessels for opening an ocean route between the ports on Hudson's Bay and Liverpool, on the assurance to them that a railway will be built. They have gone into the question very thoroughly, having at their command the latest charts, log books and information respecting the navigation of the northern seas, and have also obtained valuable information from the "*Depôt des Carte de la Marine et Colonies*" at Paris. The very fact of this syndicate being prepared to enter into the scheme at their own

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risk, after having obtained such full information, proves the practicability of the route. They appeared to have no hesitation on this point. The people in London whom I interviewed seemed to entertain the matter favorably, when they understood that the Liverpool Syndicate was prepared to furnish the necessary steamships, and I think there would be no difficulty, by combining interests of the Liverpool and London capitalist, in obtaining all necessary capital to build the road, either in London or Berlin. I explained the ground work of the scheme by stating that we would obtain nearly the whole of the traffic of Minnesota, Dakota and possibly a part of Iowa in addition to that of Manitoba and the North-West. That we had some 600 miles of water communication in almost a straight line between the head of navigation of the Red River and the lower end of Lake Winnipeg, passing through the greater part of Minnesota and Dakota on its route, a comparatively small outlay is necessary to make this navigable for vessels drawing 8 to 10 feet of water, and the cost of transporting freight would be much less than a similar distance on the lower lakes and the St. Lawrence, owing to the absence of the necessity for canals and the detentions caused thereby.

The cost for ordinary freight from Winnipeg to the north end of Lake Winnipeg would be about \$2.50 per ton. Grain could be carried in quantities for from two to three cents per bushel, and if the trade warranted, from one to one and one half cents per bushel. This would of course imply elevators at each end. From the head of navigation on the Red River to the north end of Lake Winnipeg transport for grain should not cost more than from $3\frac{1}{2}$ to 4 cents per bushel. There is a convention between the Canadian and American Governments which admits of the transport of grain through either country to an ocean port, free of duty. I mention this as I have seen it stated in the newspapers that the duty on American grain would prevent its passing over the projected route.

(Sd.) C. J. DRUMMOND.

1. GEORGE A. BAYNE,
2. Civil Engineer,
3. Winnipeg.

I was instructed by the directors of the Nelson Valley Railway Company to make an exploration survey of their proposed route from Winnipeg to the

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shores of the Hudson's Bay, at Fort Churchill. From Winnipeg northward to the mouth of the Red River, the country is thickly settled, the surface is level and the soil a rich dark loam. From thence through the Icelandic reserve to the White Mud or Icelandic River, the country is undulating and as a whole, densely timbered with poplar and a small proportion of spruce. The agricultural resources of this country have not been thoroughly tested, but sufficient farming has been done to demonstrate that the land is of the best quality. From the White Mud River northward there is no settlement except at points along Lake Winnipeg, where timber limits are being worked. The land along this part of the route is similar to that on the Icelandic reserve and quite as suitable for cultivation. There is abundance of timber in this section. The Little Saskatchewan is the first river crossing of any importance, but presents no unusual obstacle. The Big Saskatchewan crossing is of more importance, but nature has done much to favor the construction of a bridge at the Grand Rapids, as the banks are high and steep and composed of solid limestone, furnishing good material for the necessary piers and abutments, while the stream is narrowed by the presence of two islands in the channel. The crossing of this river will be an important point, as the intersection of the water transport of the Saskatchewan with the line of railway. It may eventually be considered advisable to run a short branch line from a point a few miles north of the crossing to the head of Cedar Lake where boats are frequently wind-bound. From the Sebatochewan Rapids to Was-ka-owa-ka Lake, is the only rocky portion of the route. This section will require much more minute exploration than I was able to give it, before final location can be decided upon. The number of rivers to be crossed is greater than on the southern portion of the route, averaging one crossing to about every ten miles. The streams are, however, very small, the largest being the Burntwood River. This river forms the outlet for a chain of Lakes lying parallel to the Nelson River and a few miles to the westward of that stream. After crossing this river we strike across the height of land between the Nelson and Churchill Rivers, which can be surmounted by a grade of one foot in a hundred. The soil over this section is lighter than the southern. The water powers along the Nelson River and its tributaries are very numerous and unlimited in extent. From Was-ka-owa-ka Lake to Hudson's Bay, the cost of construction will probably be not more than on the southern end of the route. The soil for the first hundred miles is clay over gravel, and the surface is pretty level; the balance is a level mossy plain. The rivers to be crossed average about one to every twelve miles, most of them small. The lengths of the different divisions I estimate as follows:

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Winnipeg to Sebatchewan Rapids,.....	350 miles.
Sebatchewan Rapids to Was-ka-owa-ka Lake,.....	213 "
Was-ka-owa-ka Lake to Hudson's Bay,.....	152 "

Total length, 715 miles.

I consider myself safe in saying that the length of the road will be lower rather than above this figure.

* The harbor at Churchill is one of the finest I have ever seen. Nature has done so much for it in the way of protection from storm and in depth of water, that without farther improvements it is fitted to take rank among first class ocean ports. I took careful soundings, and find at a distance of 400 feet from high water mark along the shore, a depth of 38 feet deepening suddenly to 50 feet. These soundings were taken at extreme low tide. At spring tides the river rises at least 15 feet, so that it will be seen that the river affords from 53 to 65 feet of water. The entrance to the harbor I judge to be about half a mile in width, the point on the west side extending into the Bay, and overlapping that on the east.

f From reliable information I learned the following facts, viz: 1st The Bay and harbor of Churchill are open for navigation from the 15th June to 20th October for ordinary sailing vessels, such as now trade to this port. 2nd. That sometimes the ice does not take fast in the harbor until the 1st December. 3rd. That the ice is never solid in the Bay for a greater distance from the shore than half a mile, and this is liable to be broken up by wind and tide. 4th. That this harbor is considered by the coasters to be the best on Hudson's Bay.

From the above facts it will be seen that so far as the harbor at Churchill is concerned, that there will be found little difficulty, that experience and practice will not overcome to prevent the loading and unloading of steamers all the winter.

The facilities for winter trade is one of the strong points in favor of this harbor. I spent the summer of 1881 on the Nelson River between Dubak Lake and Cross Portage, a distance of 60 miles, over which I ran a trial instrumental line. In next April I left Winnipeg, staying at Norway House until the opening of navigation on the 28th of May, preparing for the summer's work, and then made a through trip to Churchill, arriving on the 15th July. I have walked over the entire route and taken barometric observations.

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After getting the necessary information and soundings of Churchill harbor, I returned by way of the Deer River, arriving in Winnipeg on the 22nd September. At the time of my reaching Churchill (15th July,) the harbor was perfectly clear, and only a little floating ice was perceptible at a distance in the Bay. White porpoise and seals came into the river by thousands, with every tide, going out with the ebb tide. Salmon and other edible fish were in great abundance and of a better class, firmer flesh and better flavor than I have tasted elsewhere in this country. In January 1883, I returned to Norway House and made an instrumental traverse survey of the Nelson River from Sebatchewan Rapids to Duck Lake, traversing both Big Reed and Big Grass Lakes, and laying off a plot of 10 square miles on Big Reed Lake as the northern terminus of lake and river navigation. I located six miles of road from this proposed terminus, cleared the right off way for three miles and erected a warehouse and wharf. This work was all done and paid for by the Nelson Valley Railway Company, through Duncan MacArthur, the Manitoba representative of the Company. Since that time, owing, I believe to the projected amalgamation with the Winnipeg and Hudson's Bay R. R. Company, nothing has been done, though I have been desired by the Company to hold myself in readiness to proceed with the work as soon as negotiations were completed.

So far as I am aware there is more popular confidence in the Nelson Valley Railway Company, proceeding with the construction of the railway than in the Winnipeg and Hudson's Bay Railway Company's efforts towards the same end. The Nelson Valley Railway Company have paid all accounts incurred on behalf of engineering work and contracts for construction so far, and from the men of capital interested in the work, have the ability to do so in the future.

There is, if anything, less snow north of Lake Winnipeg than about here. During the winter of 1882 and 1883 I was able to carry on work without the loss of a single day from stormy weather. During the summers I passed on the line of route, the weather was generally good, showers of rain being perhaps more usual than about Winnipeg. The days were hotter and the nights cooler than here. Sufficient timber can be got out on the line of the railway, from Lake Winnipeg northward for purposes of construction. Exploration will more fully develop the resources of the country in this respect. From the Saskatchewan River southward, a very fine timber country is traversed that will be eventually of great value to this country. The line would tap the lumber trade of Lakes Manitoba and Winnipegosis where large areas of densely timbered country exist, which are at present inaccessible on account of their distance from the water sheds of the country. I have

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been engaged on surveys in the Province of Manitoba and the North-West since 1872 and have a good general knowledge of the character and resources of the country. From this knowledge I have no hesitation in saying that a railway built on the projected line would derive a large revenue from local traffic, and that this with the immense through traffic that would flow to it, would make it one of the best paying roads on this continent.

(Sd.)

GEO. A. BAYNE, C. E.

1. JAMES WARD.

2. Farmer.

3. St. Anne P. O.

Left Stromness on the 6th July, 1882, on the H. B. Co's. ship "Prince of Wales." Reached York Factory in 5 weeks and 3 days. Were 19 days reaching "Resolution Island" at the eastern entrance of Hudson's Straits. It took us seventeen days to get through the Straits on account of calm weather and floating ice. A sailing vessel cannot push through ice without a fair wind. We would not have lost two hours in a steamer. When we reached the eastern entrance of straits we met five American whalers. They took the south side of the Straits, while we took the north. They made the trip through the Straits in about three days, and met no ice. Our voyage was an exceptional one. Capt. Hard, who commanded the vessel, told me that was his forty-sixth trip through the Straits, and he had never seen so much ice before. After reaching Mansfield Island, at the western end of the Straits, it took us but three days to reach York Factory, where we arrived on the 12th August. Hudson's Bay was clear of ice, and as smooth as glass. Have often heard old employees of the Hudson's Bay Company say that the Bay was clear of ice about the 1st June. The ice begins to form on the shores of the Bay about the 1st November, but the Bay and Straits are open all the year round. There would be no use for the Hudson's Bay Company's vessels leaving before July, as they expect to bring back cargoes of furs from York Factory, gathered at the various posts in the North-West, and if they arrived sooner than August these cargoes would not be ready. I wish to express my firm conviction as to the feasibility of Hudson's Bay navigation. We did not meet with ice all the way through the Straits. The most ice was met from Resolution Island to Wegg's Island. Very little was met after passing that place. As regards which channel is the best, no man can decide that. It depends on the wind. If the wind is from the north the north side will be the best; if from the south the south side of the Strait will be the best.

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I wish to state that the seventeen days we were in the Straits, ice did not delay us all that time. From the time we made Resolution Island we had head wind. We would beat up against the wind till Resolution Island would be lost sight of, and the turn of the tide would carry us back to the island. The current in the Straits is very strong. No difficulty met with only when the wind blows with the current.

I am surprised how people can doubt the navigation of the Straits or Bay on account of ice. Not one man that has come over that route but believes in its practicability. Mansfield island will be a good place for a lighthouse and station. There is a little lake of good water on that island.

The day before we made land we were sailing through large schools of white whales, they being so numerous that we could see them turning on the ships bows. All the ice met with in the Straits was hummock ice which was so rotten that when the ship ran against it it would break. I believe more ice will be met in the Straits in July and August than in May and June.

I was in Franklin Bay in August, 1865, and met a party of Esquimaux who had come from the Gulf of Boothia, * in canoes and boats. The ice set south about one month before, and they were able to travel by water.

(Signed) JAMES WARD.

* NOTE.—The Gulf of Boothia empties through Fury and Hecla Straits (Lat. 70 N.) into Fox's channel, and thence through Hudson's Straits.

SPECIAL COMMITTEE REPORT.

The Hon. Mr. Brown from the Committee on the Hudson's Bay Inquiry, presented their Sixth Report, which was read as follows :—

Your Committee beg leave to report that they have met eleven times, and have taken the evidence of the following witnesses, viz :—

MR. JOHN MOYES, Winnipeg.
MR. C. N. BELL, Winnipeg.
MR. H. JOHNSTON, Winnipeg.
CAPT. W. KENNEDY, Winnipeg.
CAPT. J. HACKLAND, Headingly.
MR. W. STEPHENSON, Headingly.
CAPT. COLIN SINCLAIR, St. Andrews.
MR. D. MACARTHUR, Winnipeg.
CAPT. H. ROBINSON, Winnipeg.
MR. W. ARCHIBALD, Winnipeg.
MR. W. DICKSON, Lake Francis.
MR. JNO. HARGRAVES, High Bluff.
MR. C. S. DRUMMOND, Winnipeg.
VEN. ARCHDEACON COWLEY, Dynevor.
JAMES WARD, St. Annes.
GEO. A. BAYNE, C. E., Winnipeg.

And have received written testimony from many others.

Many of the gentlemen examined have had personal and extended experience as officers and servants of the Hudson's Bay Company at their posts on Hudson's and Ungava Bays and the rivers emptying into those bays.

No evidence has been given that goes to prove that Hudson's Straits and Bay proper, ever freeze over, or that the ice met with in those waters is sufficient to prevent navigation at any time of the year.

That, consequently, the period of navigation is defined by the time during which the ports, harbors, or roadsteads on the shores of the Bay can be entered by vessels of a suitable description for such navigation.

That, from the evidence adduced, it appears that such ports or harbors are open on an average, from four and a half to five months in each year to ordinary vessels.

That Hudson's Bay and Straits appear, from all evidence taken, to be singularly free from obstruction to navigation in the shape of shoals or reefs; and, during the period of open water, from storms or fogs.

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That, while in the opinion of your Committee, sufficient evidence exists to prove the practicability of a route of communication with this Province via Hudson's Bay, your Committee is glad to perceive that it is the intention of the Dominion Government to send an expedition to examine into the general question of the navigation of Hudson's Bay and Straits, and to obtain such information as will enable correct charts of the coasts and harbors to be constructed.

That, considering the paramount importance to this Province of such an investigation, your Committee advise that steps be taken by your Honorable House to secure a proper representation of this Province upon such expedition.

Your Committee has also examined many persons familiar with the country between this Province and Hudson's Bay, and has examined the reports of engineers and others, charged with the duty of making technical explorations of such country, and are of the opinion that no engineering difficulties exist which will prevent the construction of a line or lines from this Province to the shores of Hudson's Bay.

Your Committee begs to draw the attention of your Honorable House to the immense commercial importance to this Province of the proposed route of communication, whether by rail and water, or by rail alone. They find that the area under cultivation in the states of Minnesota and Dakota, and in this Province, in 1882-3, aggregated nearly 9,000,000 of acres, which produced a crop of all kinds of grain amounting to upwards of 80,000,000 bushels. One railway alone (the St. Paul, Minn., Manitoba R.R.) carried southward 13,087,120 bushels of wheat, 370,010 barrels of flour, during the year ending the 30th June, 1883, and it is safe to assume that had the outlet via Hudson's Bay existed, at least one-half of this produce would have followed that channel to the seaboard.

Your Committee feels justified in assuming that this route would be extensively availed of by the shippers of this country and the neighboring States of America in consequence of the fact that the distance from Winnipeg to Liverpool via Hudson's Bay is 570 miles less than from Winnipeg to Liverpool via Montreal and the Straits of Bell Isle, and 770 miles nearer than via Montreal and Cape Race, while it is 1,051 miles nearer than by way of New York. By sea, Churchill Harbor is 64 miles nearer to Liverpool than is Montreal, and 114 miles nearer than New York.

Not only is the all rail route much shorter than by an other line, but nature has provided water ways from the head of navigation of the Red

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River to the foot of Lake Winnipeg which can be utilized for over six months in each year, thus reducing the length of railway line to be traversed, to within 400 miles or a less distance than from Winnipeg to Port Arthur.

Your Committee has, therefore, no reason to doubt that a railway from thence to Hudson's Bay will prove a successful and remunerative undertaking; and are satisfied that such an outlet will do more to stimulate production in this Province and the North-West generally than any other enterprise.

Your Committee has embodied in the appendix to this Report, such economic and commercial statistics as are available, as proofs of the practicability and advisability of establishing communications with this Province via Hudson's Bay.

Ordered,—That the Report be now received.

